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SEE P130



GROUP TEST

IT'S A CLEAN SWEEP

The anti-spyware programs with the muscle to cleanse your PC p80

How to burn the perfect CD & DVD



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18 pages of essential help to solve your PC problems p108

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Welcome to PCAnswers



SIMON PICKSTOCK
Editor

This month's star letter (see page 10) is very timely. In a recent issue meeting, we decided that the biggest concern for any PC user is security and that **PCAnswers** would become the number one magazine for your security needs. If your PC is connected to the Internet, either via dial-up or broadband, then keeping your PC safe should be a priority. The days of relying on good practice and simply installing an anti-virus client are sadly long gone. There are a number of ways in which your PC can become compromised, ranging from the obvious (opening an infected email attachment) to the

more obscure (mistyping a URL and having your browser hijacked by a malicious site).

While there are plenty of scare stories in the mainstream press, the fact is that it's all too easy to let your guard down and many of the programs we use every day are inherently insecure. There is no panacea, but by adopting a layered approach to securing your PC, you can certainly shore up a majority of the holes. Our group test of malicious-software removal tools this month proves this. No single product can counter every threat, although most will remove better than 90 per cent. One very pleasant surprise is how well Microsoft's *AntiSpyware* fared. OK, it's an acquired product rather than one developed in-house and it might have been relabelled as a beta version, but it does at least show that Microsoft is finally addressing security in a pro-active manner. And that can only be a good thing for all of us.

PCAnswers' guarantee

Every issue of **PCAnswers** promises to bring you the best value for money with:

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- Hardware upgrade advice for your PC
- Practical projects and tutorials for you to try
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PCAnswers

MAY 2005

Inside this issue

INDUSTRIAL-STRENGTH TIPS!

KILL ALL SPYWARE!

Make every type of malicious software vanish with our stress-free guide

PAGE 68

→ SOLUTIONS

Tips, tricks and projects

p15

→ HACK IT

Maximum power, minimum effort

p47



- 16 **25 tips**
Burning discs
- 20 **Project 1**
Video editing
- 28 **Complete guide**
Record your vinyl

- 36 **Project 2**
VHS to DVD
- 44 **Linux**
User accounts
- 46 **5-minute guide**
Google desktop search

- 48 **Feature**
Design a Web site in a Flash!

- 52 **Hack the Registry**
Stop changes being made

- 54 **XP admin tools**
Limiting user options

- 56 **How Windows works**
How to start broken Windows

- 58 **Hardware project**
Upgrade to Media Center

- 64 **How to upgrade**
Power supplies

- 66 **Don't try this at home**
A tribute to Pink Floyd



On your CDs

All the best free software available, so you can get more from your PC!

137 Floorplan 3D v7.3

Plan your house and DIY projects

138 Alpha Five

Design and create your own databases

142 iWatermark

Stop people stealing your images by adding your own unique watermarks

140 Complete Internet Cleanup

Protect your privacy and cover your Internet surfing tracks

20 Roxio VideoWave Movie Creator LE

Use our five-page tutorial to turn your home movies into motion-picture masterpieces



QUICK GUIDE

Your at-a-glance guide to what's in this issue

- 5 Editor's intro
- 8 News
- 10 Inbox
- 12 Technofile
- 15 Solutions
- 47 Hack it
- 68 Cover feature
- 79 Reviews
- 106 Competition
- 107 Support
- 117 Subscriptions
- 136 CD pages
- 143 Classified ads
- 146 Next month

WIN!
ALL-IN-ONE
PRINTERS
TURN TO
PAGE 106



→ REVIEWS

Spend your cash on these upgrades p79



80 **Software group test**
Anti spyware

86 **Cool gadgets**
Got to have it!

88 **Hardware group test**
Photo printers

96 **Reviews**
Top products

→ SUPPORT

Expert help for your problems p107

108 **Ask the experts**
Your problems solved

116 **5-minute guide**
Trojan remover

118 **The clinic**
Fixing laptops

120 **Hardware helpdesk**

128 **How it works**
ADSL broadband

130 **Network**
Top 10 tools you need

135 **Patches & updates**
Stay current

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WHAT'S HAPPENING IN THE WORLD OF PCs?

Newsflash

We track down the news stories that matter to you

What Intel did next...

...64-bit computing, rapid wireless technology, digital lifestyles...

At the latest Intel Developer Forum the chip manufacturer revealed its plans for both consumers and business users. Top of the list was confirmation that Intel is going down the 64-bit road, despite stating the contrary when AMD released the AMD64. Intel's Extended Memory 64 Technology (EM64T) will become part of the newest P4 processors – Extreme Edition and 6xx chips – as well as the Celeron chips. The processors will tie in with Microsoft's decision to release Windows XP Professional x64 edition some time this year, and fit into its plan to produce 32- and 64-bit versions of Longhorn.

Intel's ultra-wideband wireless (UWB) technology is designed to transmit data up to 10 metres at high bandwidths (480Mbps). It's equivalent to USB2, but without the wires. Low power requirements means that UWB is suited for transferring high-quality multimedia files, such as video, between PCs and consumer electronic devices such as TVs. There's also no interference with other wireless technologies. This'll be a big boost to Media Center PCs: imagine streaming home video files that you edited together on your PC to your wall-mounted plasma screen, or playing downloaded music through your Hi-Fi.



Intel's concept model of its compact laptop means high-quality entertainment on the move

Intel has examined how its chip technology will fit into the digital lifestyle market. At the forum it made available the concept models that it envisages will revitalise the laptop market. The models were small enough to fit in the user's hands, and some of the features sounded exciting. They include a touch screen that doubles up

as a keyboard, GPS navigation system and WLAN connectivity.

Turning to the business side of mobile working, Intel has come up with Virtualisation Technology (VT). This enables a system to run different programs or even OSes on the same machine at the same time. It'll enable one PC to function as multiple virtual platforms. Security is high on Intel's agenda: its concept models all featured fingerprint readers and visual indicators of activity. VT also includes features designed to combat malicious software attacks.



The UFO in the lobby of Intel's Developer Forum is actually a close-up of a Pentium processor magnified, oh, a gazillion times

BYTE SIZE

Snippets from the realm of computing



Sony's walkmen

Keen to reassert itself on the portable music scene, Sony has produced a range of flash-memory music players. The Network WALKMAN series features OLED displays, FM radios and a choice of metallic colours. Find out more at www.sony-europe.com.

Virus advice from the top

There will always be some people who remain oblivious to the dangers online. This is the audience that the government is targeting when it launched IT Safe (www.itsafe.gov.uk), a service that highlights the most serious threats, together with advice on how to prevent PCs from falling victim to them. To avoid information overload, alerts will only be issued for high-profile threats that are on a par with

headline-grabbing viruses such as Netsky and MyDoom, which have the capacity to affect millions of people. The service foresees issuing a maximum of ten alerts a year. Once a user subscribes to the free facility, they'll be sent email or text alerts whenever IT Safe judges a threat to be serious enough. It'll contain information on how to protect themselves, rather than an actual patch or standalone program.

**COVER
FEATURE
P68**



Finally, the government has turned its attention to the many online dangers

Speak and tell

Handheld translation devices are being used by the US army in war and disaster zones. The PDA-sized Phraselator enables the user to select and broadcast pre-recorded phrases in a foreign language, and record replies for later translation. They were used during the tsunami relief operation.



Boards of a feather

A US professor has proposed using chicken feathers in the manufacture of circuit boards, replacing the current petrol-based components. Richard Wool has enlisted Intel's help and believes that such green manufacturing can be applied to the construction and car industries.

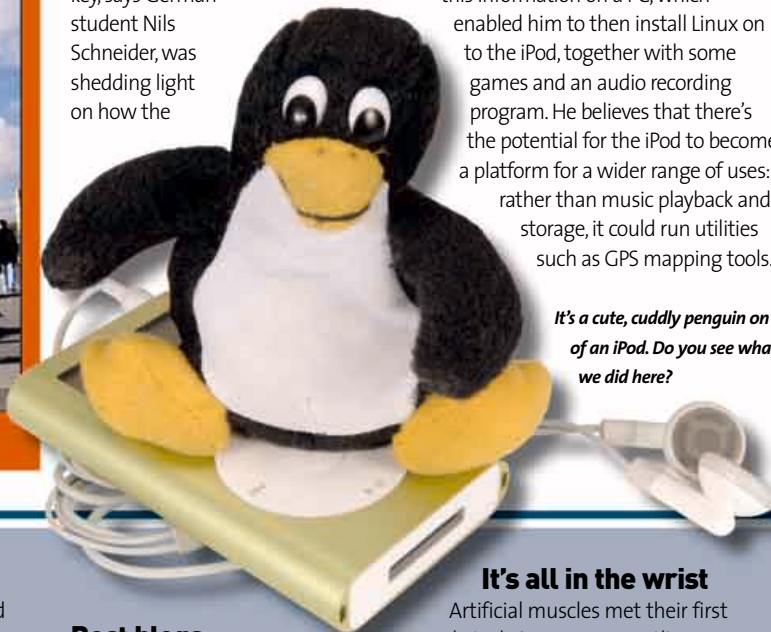
iPod succumbs to Linux ingenuity

Student installs the open-source OS on the world's favourite music player

Customised iPods: what does this suggest to you? A toughened carrying case? Your name laser-etched on to the back? One enterprising iPod owner has managed to install Linux on the music player. The key, says German student Nils Schneider, was shedding light on how the

iPod started up: in essence, cracking the bootloader code. He obtained this information by analysing the clicks made as the user scrolls through the player's menus. By encoding the audio clicks, Schneider was able to decode this information on a PC, which enabled him to then install Linux on to the iPod, together with some games and an audio recording program. He believes that there's the potential for the iPod to become a platform for a wider range of uses: rather than music playback and storage, it could run utilities such as GPS mapping tools.

It's a cute, cuddly penguin on top of an iPod. Do you see what we did here?



It's all in the wrist

Artificial muscles met their first obstacle in an arm-wrestling contest. The plastic arms are made of electroactive polymers that change shape when activated with electricity or chemicals. The aim is to fit them on to humans, where the use of electric motors and hydraulics is unsuitable. However, all the arms were beaten by a 17-year-old girl.

Best blogs

The Bloggies have just been announced, highlighting the best of the Internet's blogs (Web sites, journals and so on). www.plasticbag.org took the prize for best British blog and received a lifetime achievement award, while Weblog of the year went to www.boingboing.net.

Inbox

Seen something in this magazine that's helped you, or made you angry? Let us know! Your thoughts are worth money!

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RISKY BUSINESS

I read your March editorial with great interest and had to email you about my recent experience. I will never be a smug know-it-all with computers again, looking disdainfully at the people who ask for my help with their PCs, not knowing that it's infested with Trojans, viruses, spyware and browser hijacks.

I recently logged into my online banking and looked in disbelief as it showed a four-figure sum had been removed from my account. I was left devastated by the experience, as if a burglar had ransacked the house. *Norton AntiVirus*, *SpyBot*, *AdAware*, *Registry Medic* and *HiJackThis* found nothing at all. I decided to purchase new AV software and chose *Trend AV Security 2005*. This found a Trojan called KLOG_PPATrol.A. I don't know where this came from or how it got through my defences, as everything was fully updated, including Windows.

I don't use online banking any more and recommend that you be extremely guarded if you still do. The bank has since informed me that the online transfer limit is £10,000! My skin creeps just to think about what could have happened. I have now been

fully reimbursed, but only after four weeks of worry. One note of caution here is that the bank sent me a letter suggesting they would refund the full amount, but only after I provided it with the software version of both the AV and firewall I had installed. Fortunately I had both, but somewhere in the small print it probably states that you won't receive a refund if your computer isn't fully protected by AV and firewall software.

In the past, I've been tempted to use *Kazaa*, *Blinkx* and warez sites and I think this is where the Trojan came from. So beware and don't be tempted to download something you haven't paid for; P2P is simply not worth the risk! **Lloyd Neale**

It's a sobering thought and a timely reminder that security is a state of mind. Your PC will only ever be as secure as you choose to make it and there's simply no point erecting a virtual ring of steel if you then use P2P software, which is notorious for infecting your system with spyware. We hope your unfortunate experience has the positive outcome of showing the **PCA** readers how easy it is to let your guard down.

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TV trouble

You've written several articles on building a PVR. They have been helpful, up to a point, but there was a great deal more which could have been said. I tried connecting my TV to my PC, and nearly gave up. Much browsing and research later, I find that there is more to it. For example, my particular graphics card, in spite of having video-in, video-out, and AV-out, is known to give poor results with TV. *TVTool* was written to improve this card, but the site is being wound down. Reliable information about the quality of TV-out from most graphics cards is almost non-existent.

TV cards are equally obscure. Manufacturer's sites often claim that vast numbers of channels are available, but which exactly? Is the tuner for analogue or digital TV? Do some cards need to work with or without other set top boxes? In the South West we have just been told, in the last week, that this will be the first area to have the analogue TV transmissions switched off in 2008: an ideal excuse for me to tell my wife I need to build a Media PC! Is there any chance that the clever minds at **PCA** could turn their thoughts to a series of articles on all things TV and PC related? Is it possible to get as good a quality TV from a PC as from a dedicated PVR? **John Dietz**

TV tuner cards are designed for use on PCs

TVs have incredibly poor resolution compared to a PC's monitor

using a VGA monitor, rather than a TV set. The reason for this is one of quality. A monitor will have a display of say 1024 x 768 pixels, which translates to a horizontal resolution of 1024 lines. A PAL TV signal consists of 625 horizontal lines, but only 580 lines are used for picture display. This means that computer displays look awful when output to TV. One solution is to run Windows at a resolution of 640 x 480, but the minimum resolution in XP is 800 x 600. In addition, the TV-out on many graphics cards is composite, rather than S-Video or component, which is the lowest quality standard. There are no simple answers, but we will be looking at providing more information

Feeling adventurous? Why not run the Apple Panther OS on your PC?



regarding outputting TV display in the future.

✉ The times they are a-changin'

Today I finally had enough of spyware disabling my browser, so I downloaded and installed *Mozilla Firefox*. I liked the way it imported my *Internet Explorer* settings and even better, there were no more browsing problems. I've also installed *ZoneAlarm* in preference to Windows Firewall. I'll look at *IE7* when it comes out, but I am recommending *Firefox* from now on.

The article on the new Apple mini was interesting; I might be tempted to buy a Mac one day, but all my customers currently use PCs. So even though I might be able to develop solutions using *Excel* and *Access* on a Mac, I think I would still need a PC to test them on. If

installing something called *PearPC* (<http://pearpc.sourceforge.net/>). We'll be trying this ourselves and will possibly run a feature on it soon.

✉ Hobson's choice

I have been a subscriber to your magazine for a couple of years now. I've always liked it and the changes in format have never been a problem for me: if anything, they keep it interesting. My favourite section has always been *Inbox*, so I thought it was about time I made a contribution.

I have been reading in the IT press about Microsoft's announcement to make an early release of the more secure *IE7* rather than wait for the release of Longhorn. With all the clamour about Microsoft's lack of commitment to security, the company has responded, firstly with the release of Service Pack 2

and a lot of it's completely free. SP2 and the new *IE7* are just a small example of many, yet somehow these articles are claiming we're being cheated.

I moved from *ZoneAlarm* to SP2 when you included it with your magazine, my PC is permanently on and connected permanently to the Internet via a wireless DSL router that does not have a built in firewall, and so far I have had no security problems what so ever. **Paul Alco**

The cynical (i.e. us) would suggest that Microsoft is rushing *IE7* out, not purely as an updated security measure, but because Opera and *Firefox*'s rapid acquisition of market share has put the willies up the Seattle giant.

Whatever the actual reason, at least those users who stubbornly insist on staying with *IE* may have a more secure browser at their disposal. *IE7* will

presumably build on the security updates included in SP2, so it makes sense that this is a requirement and we don't see it as a negative point. However, having SP2 installed is certainly no reason for complacency. The XP firewall is no substitute for *ZoneAlarm* or any other third-party firewall, as it only blocks incoming connections, and not outgoing ones. This means you would be blissfully unaware of any malicious applications on your system trying to 'phone home'.

✉ Cherry picking

In *PCA143*, the March 2005 issue, at the bottom of page eight, is a picture of a Cherry keyboard. Is this an observation test, or a new type of key layout? The top row of letters starts QWERTZ while the bottom row starts YXZ. Please could you satisfy my curiosity?

Robert Dietz

Is this an observation test for us too? Are you the brother of fellow letter-writer John?

The answer is that Cherry is a German company and the image supplied to us is that of the German keyboard, on which the Y and Z keys

→ DETAILS

WRITE IN AND WIN!

Let us know your views on the magazine, the computing world, or anything else you want to get off your chest. The author of every letter published will receive a £10 Maplin voucher, while the best will receive £50, so get typing! Email us at pca.inbox@futurenet.co.uk

MAPLIN
ELECTRONICS

are transposed. The winners should have received UK versions!

✉ Who's right?

Regarding issue 144's review of legal music download Web sites, you've made an unfair error re: Napster, which I'm sure has affected its score. I know a lot of you are iPod fans but the subscription service that Napster provides is an upgrade. You don't need to subscribe to Napster to download tracks.

This is a quote from their Web site: 'Just want to purchase tracks or albums to burn to CD or transfer to an MP3 player? Use *Napster Light* to search, browse and

listen to 30-second clips from Napster's music catalogue of over 1,000,000 tracks for free.'

I think an apology to Napster would be fair next month and give them at least another 10 per cent on their score.

Colin Morrison

We're always willing to admit we're wrong. However, in the case of Napster, while you can indeed use *Napster Light*, this is a service that was introduced **after** we went to press and which had not been announced previously. We can only review products and services based on their features and specifications at the time of writing.

I HAD ENOUGH OF SPYWARE DISABLING MY BROWSER, SO I DOWNLOADED AND INSTALLED FIREFOX... NO MORE BROWSING PROBLEMS

the new Mac takes off then it could be worth gaining experience on it, as the demand would be there.

Andrew Capel

Glad to hear you've moved to *Firefox* and we'll be running regular guides to getting the most out of this browser as of next issue. As for the Apple dilemma, if you're feeling adventurous you could still keep your PC and run the Apple Operating System, by

for XP and now with the early release of *Internet Explorer 7*.

I expected the articles to be full of praise and recommendation, but no! If you want the advantage of *IE7* you need to have Service Pack 2 installed; apparently this is a criticism as only a small proportion of Windows' users have SP2 onboard!

There's an ocean of software out there to help protect your PC



A third-party firewall is a far better security aid than the Windows XP firewall



LIGHT FANTASTIC

Ditch your CD marker pens and make your home recordings more interesting with the power of lasers. Henry Tucker sees the light

Take a look at your CD and DVD collection and make a note of the number of discs that you've burnt yourself. We guarantee that, like us, you've got more than a fair few. We're also betting that these discs are either unlabelled or have your handwritten scrawl on them. This may be OK for a few discs, but they don't really look as good as CDs and DVDs that you buy with their nice professionally made labels, do they?

There are alternatives: you can buy sticky labels that you can print on, but they are far from perfect. In some cases, when the discs become hot the glue can come unstuck, and then the label gets stuck in the drive. With this in mind, HP has developed a new technology that could mean the end to CDs being covered in unreadable handwriting or sticky labels that come off five minutes after you've stuck them on.

Instead of writing on a disc, or sticking something on to it, LightScribe actually writes on to the disc using the laser inside your optical drive. This is done using a LightScribe-enabled drive, special media and software that supports the new standard. The LightScribe discs have an additional layer of dye on the top of the disc. To write on the disc you simply turn the disc over and the laser that would normally write the data to your disc writes a predetermined



Following on-screen steps makes it easy to set up your labels

IN THE SAME WAY THAT CDS AND DVDS ARE WRITTEN FROM THE INSIDE OUT, SO ARE THE IMAGES ON LIGHTSCRIBE DISCS

pattern on to the top of the it. In the same way that CDs and DVDs are written from the inside out, so are the images on LightScribe discs.

Vinyl revolution

The technology came about all because an engineer at HP was archiving his old Fleetwood Mac vinyl albums on to his PC, so that he could transfer them to CD. As he was doing it, he was disappointed that when he had done the transferring, the discs he had created didn't look anywhere near as good as the original albums. He then went into work and discussed this with his colleagues, and that was the start of LightScribe. HP then

set about creating the technology and hit upon the idea of using the laser that's inside the drive to create the labels.

There really isn't much to distinguish between a LightScribe drive and a standard CD or DVD writer. The only difference is that the drive has obviously been modified to create the labels. In order to do this, it's been enabled to read a small barcode that's located in the centre of the disc. Having read this, the drive knows that the disc is a LightScribe one, so the laser will then begin to etch the image or text that has been chosen to go on the disc. This can be pretty much anything.

→ STEP-BY-STEP GUIDE

Don't have a LightScribe drive yet?

Here are some disc-labelling options you can explore



01 The cheapest solution to ensuring you know what's on your discs is to write on them yourself. You need a proper CD marker pen, but even then, the results are often poor. Though you can put whatever you like on your discs (in pictures or words), would you really want to hand out discs like this to business colleagues?



02 The other option available at the moment is to buy labels for your discs. These can be printed on, and if applied correctly can look good. However, if you don't put them on straight, they won't impress anyone. The other downside is that they can come off, particularly if the disc gets hot when it's being used, and could damage your drive.



03 Whether LightScribe becomes the future of disc labelling will depend on the industry. If as many drive manufacturers take it on as software developers have done, it should succeed. Only then will the hardware drop in price, making it even more attractive. Otherwise, it could be an expensive white elephant, rapidly consigned to history.

With drives that support LightScribe, you'll find burning software as usual, but also software that'll enable you to create images or text to go on the disc. Depending on the software, it'll be able to take information such as track listings as well, and automatically add them to the image written to the disc. As this is a new technology, the images are only available in black and white currently, though HP is investigating the possibility of using colours.

Any drive will do?

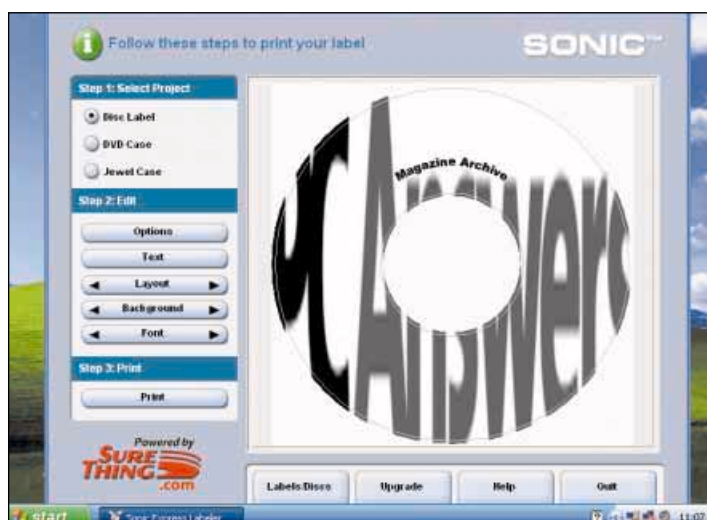
In theory, any rewritable optical drive can be modified to burn LightScribe discs, according to HP. In order to burn them though, each drive has to have the following features.

Laser focus: a novel focus strategy provides sufficient focus control for consistent, uniform imaging on the label surface.

Tracking control: images are printed as concentric circular tracks, so precise tracking is required. A tracking solution maintains constant track spacing, measured in microns, as the laser moves across the disc.

Low-speed spindle control: accurate speed control is essential for pixel placement along a track as the disc rotates. A speed control solution achieves the required pixel placement accuracy.

Write channel: a high-speed hardware communications channel – distinct



Once you've found a suitable image, import it into the Lightscribe software

from that used for data writing – is used for labelling.

The host system then needs to have software that supports LightScribe, the Label Control API, the LightScribe drive communication layer (a high-speed communication path that encompasses all hardware communication and control, as well as providing hardware status and capabilities) and the LightScribe Label engine.

HP wants this technology to become an industry standard. Therefore, LightScribe is being operated as a separate entity within HP, but will soon be off on its own. Initially, you'll only see HP PCs and

optical drives supporting LightScribe, but this is only in the short term.

Despite spending money developing the technology, HP will only have it exclusively for three months. This is because HP wants it to become an industry standard used by many different manufacturers. HP is already working with a number of software developers and optical media manufacturers such as Nero, CyberLink, Roxio, InterVideo, Imation, Memorex, Philips and TDK.

Of course, whether the industry adopts LightScribe is a million-dollar question. The discs do look good, but we shall have to wait and see how the industry reacts. ■

→ RANT

INDUSTRY APPROVAL?

Will HP get the recognition it so desperately desires?

It doesn't happen often, but with LightScribe we really hope that it takes off and becomes an industry standard. At **PCAnswers** we are big fans of recordable CDs and DVDs, so any way to make the discs we burn look even better has got to be a good thing. That's not to say that LightScribe is perfect, but what technology is when it's first launched?

The best way for it to advance is for it to be adopted by the industry as a whole and for it to evolve and improve as more and more people use it. Then prices will drop for both drives and the media, and we may also be able to print in colour.

Some would say that HP is being philanthropic by making the standard open, but what we don't know is what it will charge for it.

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We show you how to get
started in video editing

STARTS ON PAGE 20



**UPGRADE
YOUR PC
TO MEDIA
CENTER**

See page 58

**‘Videowave Movie
Creator is the ideal
starting point for
budding filmmakers’**

→ SECTION CONTENTS



HENRY TUCKER
Deputy editor

HENRY'S TIP OF THE MONTH

Change your user account icon in Windows XP and personalise it. Go into user accounts in Control Panel. Select your account and then select 'Change my picture'. You can use almost any image that's on your PC, such as a picture of yourself.



COMPLETE GUIDE

We show you how to convert your old LP and tape collections to digital format, remove noise and even convert it all to CD, with Audio Cleaning Lab **PAGE 28**

25 Tips **P16**
Never suffer from VCD or DVD burning problems again!

Convert VHS to DVD **P36**
Put all your old TV shows on to DVD with ease

5 Minute Guide **P46**
Using Google desktop search

**LINUX
User
accounts**

P44



Burn your data to discs

It's the definitive guide to producing working CDs and DVDs every time, instead of shiny round coasters. Mary Branscombe goes for the burn...

These days you don't need extra software to burn a CD as Windows XP can do it for you – up to a point. You can drag and drop files on to a CD-RW disc as if it was a giant floppy and you can burn data and audio CDs. You can't make bootable CDs though, or copy an existing CD as a single ISO file. Nor can you split a large file over multiple discs automatically and you can't write directly to a CD from software such as Windows Backup. Furthermore, if Windows XP decides that your CD writer is just a CD reader you have

to delve into the Registry to alter the situation.

If you want more sophisticated CD burning options, there are still two main options: *Nero* – now up to *Nero 6 Reloaded* – and Roxio's *Creator 7* (or *Easy CD & DVD for Windows 98 SE and ME*). These pack in a lot more than simple burning tools. You can convert audio and video to MP3 and MPEG-4, remove noise from old cassette recordings, put together photo slideshows (including editing the photos), build DVD menus and create labels and disc covers in both

packages. *Creator 7* gives you projects and an all-in-one interface. If you need the more esoteric options in *Nero* you'll find that it's a bargain.

01 FEELING FINAL

You can keep adding more files to a CD in multiple sessions until you finalise the disc, but only your PC will see all of them. So if you're burning MP3s on to a CD in multiple sessions and you finalise the disc once you're done, then try to play the MP3s on a standalone DVD player that can play MP3s, then it'll only see the tracks from the last session.

02 XP SESSIONS

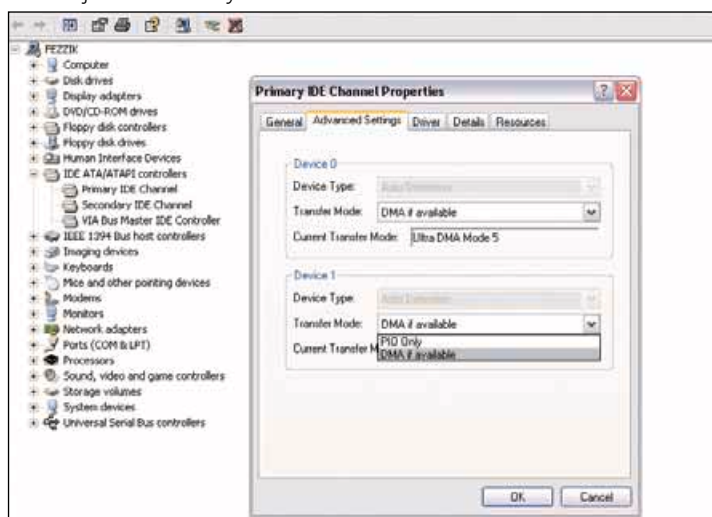
Drag files on to the CD writer icon in Explorer and they'll be burned to disc, but not straight away if it's a CD-R rather than a CD-RW. Instead, the files go into the staging area (a shell folder under your user name in C:\Document and Settings) and you have to right-click the drive and choose 'Burn these files to disc'. This saves you wasting a CD if you drag files to the wrong place and it also means you don't fill up the CD with a new session every time you copy a single file. In XP, multi-session is always on for data CDs and always off for audio CDs.

03 DRAG AND DROP

Using a rewriteable disc (CD-RW), when you use Explorer to drag and drop files you create a disc using the Universal Data Format – UDF – that will work on most PCs but not many Macs. UDF uses extra space for its error correction. You end up with around 535Mb on a CD-RW, but it doesn't need a new session for each new file.

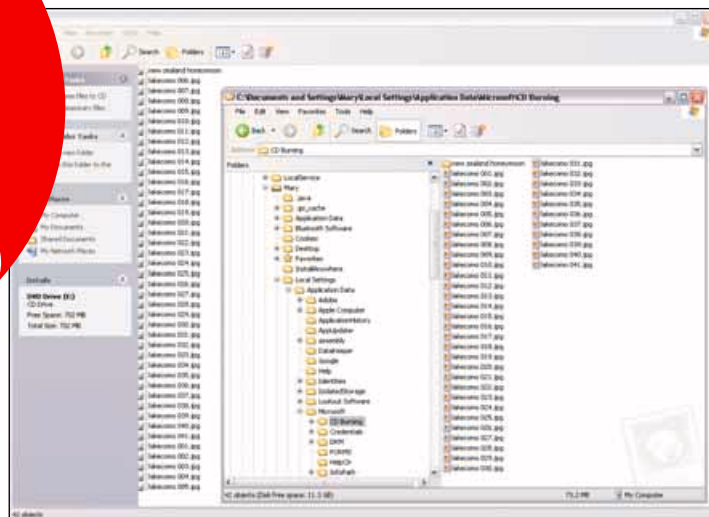
04 TRACKS OR DISCS?

Multi-session discs are burned a session at a time. On each occasion, the drive opens the disc's table of contents, burns your files and then updates the table of contents to show where the files are stored and where the session ends. That's Track-At-Once burning and storing the details of what goes where takes up space. Disc-At-Once burns the whole disc in one go and finalises it. It's what you need for audio discs and masters for disc duplicators and it gives you the most space on the disc. Usually, it will be obvious which you need, and Roxio's *Easy Media Creator* sets the right format for projects automatically, while *Nero* makes it possible for you to change it.



Change the DMA settings for your CD and DVD drives in Device Manager

25 TIPS



ALWAYS VERIFY YOUR DISCS: BIT-BY-BIT
COMPARISONS ARE THE ONLY WAY TO BE
CERTAIN YOU HAVE AN ACCURATE COPY

You can add CD-Text to audio CDs so that you see the name of the track playing on your car stereo. You have to burn in Disc-At-Once mode, but that's what you do with audio CDs anyway. Your software will pick up the track names from the audio file's metadata (the player's do), but you can

06 CHECK YOUR DATA

Always verify your discs after you burn them. Bit-by-bit comparison takes time, but it's the only way to be certain you've got an accurate copy. For important discs it's also worth using a utility such as *CD-*

DVD Speed (included with *Nero 6*) to check for disc errors. When you play a disc the drive uses duplicate data to cope with low-level errors caused by dust or scratches but the fewer errors you start with, the better.

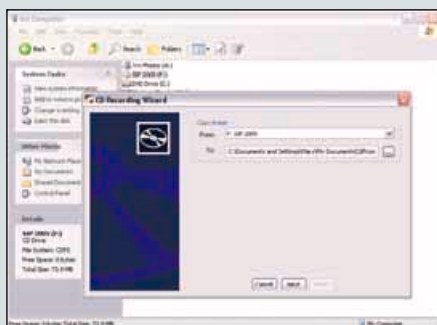
Windows XP's built-in CD burning doesn't include

copying CDs or burning ISO images. You can do both free with the *ISO Recorder Power Toy* (<http://isorecorder.alexfeinman.com/isorecorder.htm>: if you've installed SP2 download the beta version, if not install the original version). To create an ISO disc image you just right-click the CD drive in My Computer and choose Create Image from CD. To burn

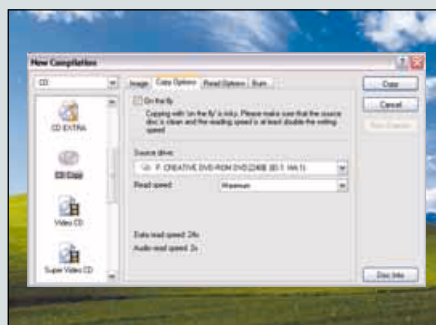
→STEP-BY-STEP GUIDE

Making multiple discs

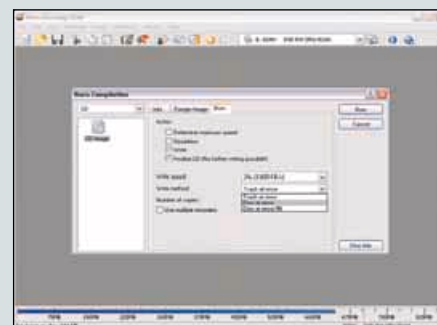
When you want to make several copies of a disc, don't waste time selecting the files by hand each time



01 Use the *ISO Recorder* PowerToy to copy a CD you've burned with Windows XP so that you can make more discs. Right-click and choose 'Create Image from CD' to make the ISO file. Click the button with three dots to choose the folder and file name.



02 Even if you've got two optical drives, copying directly from one disc to another is risky. If one drive isn't fast enough you can easily end up with an unusable disk. In *Nero*, you have to choose CD Copy and clear the 'On the fly' option before you can name the ISO file you want to create. Then select the folder to save it in.



03 To copy your ISO file with *ISO Recorder* right-click and choose 'Copy Image to CD'. If you're using *Nero* you have to choose File -> Open, rather than File -> New to work with an ISO file (in older versions it's File -> Burn Image). Tick the 'Write and Finalize CD' checkboxes and select 'Disc-at-once burning', then choose Burn.

→ FURTHER INFORMATION

Explained: built-in burning

Here's a collection of top fixes for burning problems in Windows XP

Windows XP recognises CD and DVD writers automatically... most of the time. If you can't burn directly from XP but you can use other burning software, check that Windows think you

have a writer. Right-click the drive and choose Properties, Recording and enable recording if it isn't already switched on. If you don't see the Recording tab then Windows XP doesn't know

that it's a CD-RW drive in the first place.

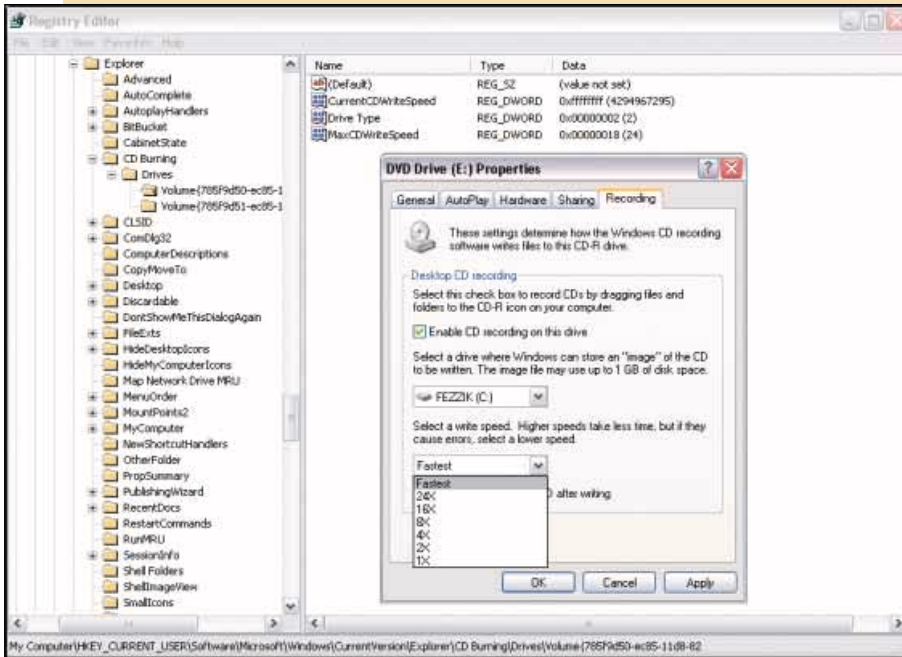
Check the Windows Catalog under Storage -> CD-DVD Drives (www.microsoft.com/windows/catalog) to see if it's a compatible

device and check Windows Update for new drivers. If you've got a drive that should work, look in the Registry Editor for the HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Explorer\CD Burning\Drives key and open the Volume{GUID} folder. The GUID is a 32-character ID for your drive. If you've got more than one CD drive you'll have more than one Volume{GUID} folder so you'll need to try this with each one.

Double-click the Drive Type value in the right pane and change the contents of the Value data box: make it 1 for a CD-R drive, 2 for a CD-RW (or a rewriteable DVD drive) and 3 for a normal CD-ROM. Close the Registry Editor and check the Properties for the drive again. You should see the Recording tab.

If recording is enabled but you have problems, check the disc in the drive. If it's a CD-RW formatted by a packet writing program such as *InCD* or *DirectCD*, Windows XP won't write to the disc. You need to reformat it or use a new blank disc.

Burning audio CDs from XP means using Windows Media Player. The usual problem with this is buffer underruns, but the error message that there isn't enough space on the disc isn't helpful. To avoid this, close other programs that are running, turn off screen savers and AV software so nothing else is using the CPU, lower the drive speed – or find yourself a BURN-Proof writer.



If you don't see the Recording tab for your writer, check the Drive Type in the Registry isn't for a CD reader

the ISO image to CD right-click the file and choose Copy image to CD. You can't copy audio, video or protected CDs.

08 BURN ON COMMAND

If you want to copy a lot of files – all the .DOC files in My Computer, for example, but not the .WBK backups – the command prompt is faster than using the mouse. Use *Create CD* (<http://isorecorder.alexfeinman.com/CreateCD.htm>) and you can burn files to CD from the command prompt. With a simple batch file you could run Windows Backup and copy the backup file to CD automatically.

09 TIME TO TRANSCODE

If you're used to burning CDs, be patient. To make video you edit on your PC play on your TV from a DVD, it has to be converted into the MPEG-2 format used on DVD video

discs. That usually happens when you click the Burn button and it can take some time to do the transcoding, especially for large files. The actual burn time can be as quick as six minutes on a 16x burner with 16x media: DVD+R is slightly faster than DVD-R and rewritable DVDs take more like 15 minutes.

TO AVOID PROBLEMS BURNING AUDIO CDS LONGER THAN 80 MINUTES, TRY BURNING AT A SLOWER SPEED

10 SPACE TO TRANSCODE

Temporary MPEG-2 files are stored on your hard drive and deleted automatically after the disc is burned, so you need enough disk space free – around 65Mb per minute of video. It doesn't make any difference whether you start off with AVI or MPEG video or what the resolution is to begin with. The file sizes for the final MPEG-2 files will be similar.

11 TRY UDF 1.02

If you can't play a DVD you've burned or you receive a Disc Error message, try again with UDF 1.02 rather than the UDF 1.05 you presented with when you select DVD-Video (newer DVD players support 1.05 but virtually all players support 1.02). For example, in *Nero*, choose

DVD-ROM (UDF), make sure No Multisession is ticked on the Multisession tab and on the UDF tab choose Physical partition for the UDF partition type and UDF 1.02 for the File system version.

12 BURN MORE MUSIC

The right media makes it possible to burn more minutes of music on to an audio CD. CD-R80, CD-

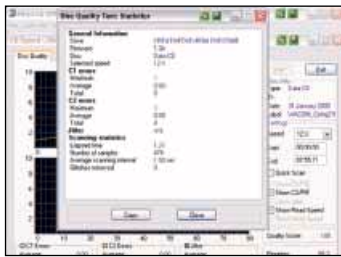
R90 and CD-R99 give you 80, 90 or 99 minutes of music and most normal CD players can play back long CDs without problems. To avoid problems burning audio CDs longer than 80 minutes, try burning at a slower speed. Single and 2x speed burns will always work, but with some drives on a faster burn, the laser may not burn the outer edges of the CD precisely.

13 PUT IT AWAY

The more information you cram on to a disc, the more problems a scratch can cause. While it's fine to keep blank discs on the spindle they came on, put them in a jewel case after burning them. Paper and plastic sleeves don't protect the discs as well and cases designed for DVDs put less pressure on the layers of the disc when you take it out.

14 HANDLE WITH CARE

As well as keeping DVDs in

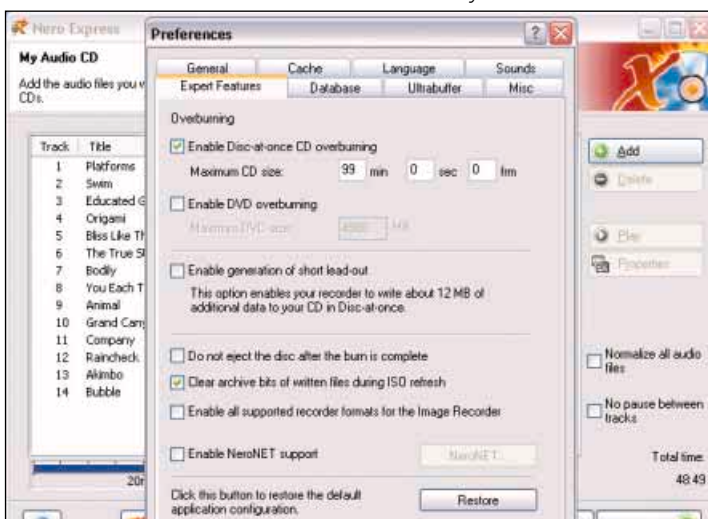


Check discs for errors: C1 errors aren't a problem unless there are lots of them and C2 might cause read failures

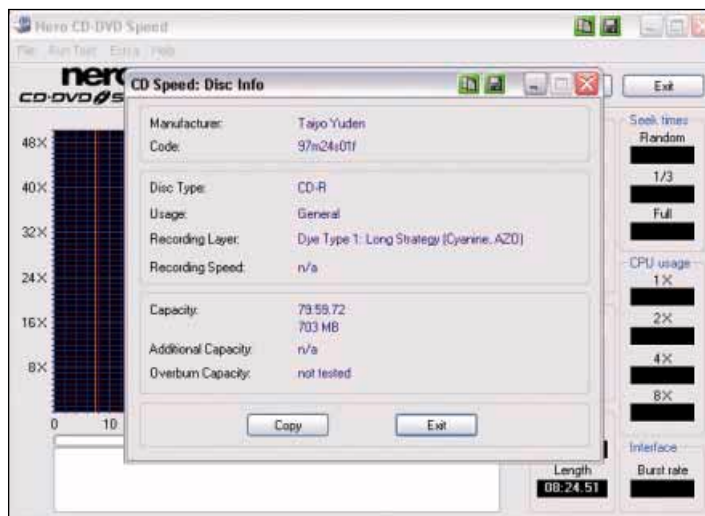
cases away from dust and grit, don't leave them on the windowsill. The dye layer is sensitive to heat and light so sitting in sunlight for weeks might cause problems. If a disc becomes dusty or you have read errors, try wiping it with a lint-free cloth. Cloths for cleaning spectacles are ideal, but paper tissues are a bad idea. Wipe gently from the centre to the edge rather than rubbing round and round.

15 LABEL WITH CARE Use water-based pens rather than alcohol pens for labelling and avoid stick-on labels for DVDs. Unless you use a circular label with really good glue, the label can peel off and become stuck. Even if it only bubbles up, this stops the disc spinning evenly and could cause data errors. Alternatively, you can make the disc itself the label. Some ink-jet printers, such as the Epson Stylus Pro 900 or the Canon IP4000R print straight on to the CD. You need inkjet printable blank discs with silver or white backgrounds. They don't cost much extra – less than the extra cost of paper labels.

16 LABEL WITH LASER LightScribe CD and DVD burners use the same laser



Turn on overburning to put more than 80 minutes of music on audio CDs



There aren't as many media manufacturers as you might think. Nero can tell you what your blank discs are

that puts the information on to the disc to burn a label on the other side. HP and LaCie make LightScribe burners and Nero is the first software to include the LightScribe option (you need the right kind of blanks, too). Yamaha's similar DiscT@2TM (that's 'disk tattoo' in case you were wondering) technology burned the label on to the unused areas of the data surface, which meant less space to store data.

17 PICK YOUR FILENAMES If you're burning a disc to use on your own PC the 64-character file names you use in Windows aren't a problem (and you automatically get eight-character file names with three-character file extensions for DOS). However, if you want be certain you can use your disc on a Mac or Linux system you can choose ISO 9660 instead of the Joliet file system.

18 TWO DRIVE TWO-STEP

In most cases you don't need both a CD burner and a DVD burner fitted in your computer. These days, DVD writers can burn CDs as fast as most CD writers. Copying from one drive to another usually caches the CD you're copying on your hard drive, anyway. Having said this, a second drive can come in handy though, to check the disc works in a different drive.

19 DMA DOS AND DON'TS

Direct Memory Access means that IDE drives such as CD writers can read information from memory without going through the CPU. In turn, this means that writing at 12x takes 5 per cent of your CPU rather than 50 per cent, which in turn means fewer buffer underruns. Some drives won't burn at high speeds without DMA turned on and a very few drives work better without DMA. Confusingly, you need to choose DMA from the IDE ATA/ATAPI controller section in Device Manager rather than under DVD/CD-ROM drives.

20 DVDS AND WINDOWS MEDIA CENTRE

You can burn DVDs from Windows Media Center 2005 without needing any extra software – if the PC manufacturer decided to pay the licence to Sonic to include the DVD burning feature. If not, you'll need a copy of *Sonic PrimeTime Deluxe* to burn DVDs from the Media Center remote interface.

→ SHORT 'N' SWEET

Burning without tears

Pick the right disc for the right job and the right result

21 Plus or minus video Usually DVD+R or -R is the best bet for burning video that you want to watch on a standalone player. Check the list at www.videohelp.com/dvdplayers and experiment to see what suits your system.

22 Rewrite data Use CD and DVD+RW or -RW for ongoing projects. You can add, remove and replace files without losing space and re-use discs, too. DVD+RW is ideal for video editing in progress because you can rewrite the DVD menu as often as you want. Fewer standalone players can cope with these formats.

23 Plain audio If you want an audio CD to play in any CD player, stick with CD-R rather than CD-RW. In addition, use CD-R or DVD-R for vital backups you don't want to overwrite or erase by accident.

24 Be prepared Brand name media is usually more reliable and compatible than generic discs. You may also want to check for firmware updates for your burner. These can add support for additional media or improve burn quality or speed.

25 Speed check With BURN-Proof technology newer CD and DVD burners don't suffer the buffer underruns that produce unreadable discs. This means you can usually burn at the highest speed the drive can manage, so long as you use high-quality media rated at the same speed. ■

PC ANSWERS PROJECT

Video-editing: the basics

PART
1 of 3

Want to turn raw DV footage sitting on your hard drive into an engaging home video? Shaun Weston has the answers

As with anything creative, be that a painting, a song, a poem or a simple video-editing tutorial, there should be a definite structure. It's true that some artists don't need structure to create masterpieces, but let's not fool ourselves into thinking we're at this stage just yet. However, with a little planning and careful consideration of our audience, we can take our amateur efforts and learn to improve them immeasurably.

VideoWave Movie Creator Lite Edition is an ideal starting point for budding filmmakers. Therefore, we're going to show you a few of the fundamentals of filmmaking using *VideoWave* as our platform.

Let's assume for the sake of this project that you already have captured footage stored somewhere on your computer. We need to organise it. There's no point making

the task of video-editing more difficult by having separate elements dotted around our hard drive. How much do you have? Is it all based in one place? Do you have any particular music in mind? Will you use still images from a digital camera? Will you employ a voiceover (narration)? These are some of the things you should be thinking about in order to prepare properly.

Our tutorial is based on nearly an hour's worth of footage from Germany. It was a sightseeing trip and there are still images and sound-only elements, plus footage at night-time as well as during the day. We're going to take all of these elements, plus the music we'd like to use (saved for this project in Windows' native .WAV format), and put them all in one folder called 'Movie Work' that will act as our primary filing cabinet.

We're fortunate enough to have a second hard drive to help with the storage of these materials, but you can still store all of your movie elements on your main hard drive.



Taking time to watch

At this point you should watch all of your footage and begin to think about the final length of your film. With almost an hour of raw footage, we would

ideally want to make a 20- to 30-minute film. However, it's rare that every shot is a gem, lit perfectly and with amazing sound. In reality, the camera shakes far too much, the noise of traffic or wind drowns everybody out and the camcorder's automatic white balance and focusing features are inconsistent. Let's change our mind and aim for a 10-15 minute film instead.

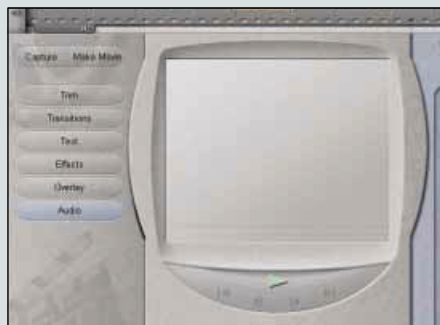
Are we making this film for ourselves or do we want to share it with friends and family? This particular sightseeing trip was a once-in-a-lifetime opportunity, so it'd be a shame not to show it off. Now we have to think of other important considerations, such as pace, interest, humour (or absence of), facts and timing. When we think about who may eventually see our finished film, we can mould the footage to appeal to a wider audience.

What exactly do we want to get across to our audience? Berlin was fantastic, so our movie should reflect this, but not at the expense of the human element. People like to watch people, so bear this in mind before you focus too much on how pretty the architecture is. Find a nice balance of clips from your stock of raw footage and aim to hold your viewers' attention with interesting shots.

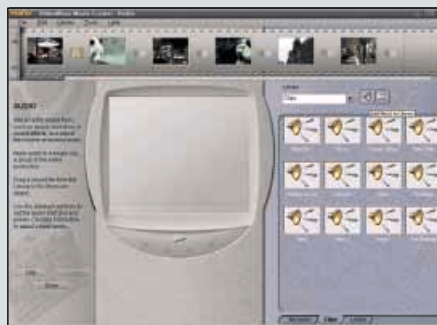
→ STEP-BY-STEP GUIDE

Ripping straight to VideoWave

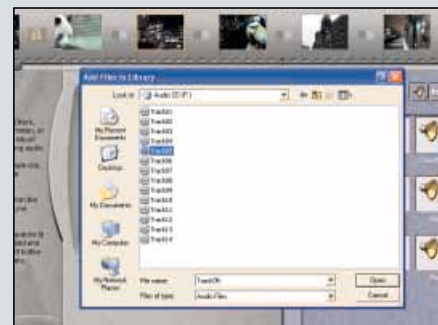
If you don't have your own audio samples, use a CD



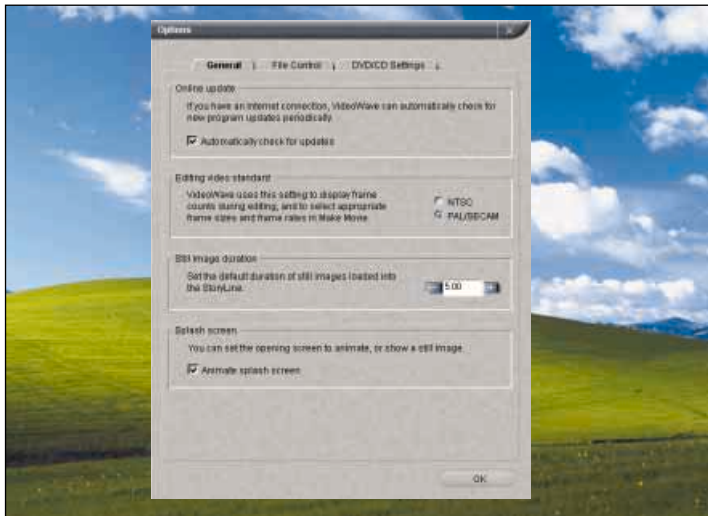
01 *VideoWave Movie Creator Lite Edition* can extract audio directly from a CD, which can come in handy. Pop a CD into your computer and press the Audio button on the left-hand tools panel of *VideoWave*.



02 This will open the audio library on the right. To access your CD, use the button next to the library drop-down menu, marked 'Add file(s) to Library'. This is how you access the CD in your CD drive via Windows Explorer.



03 A dialog pops up and you should find the drive that contains your CD. Next, you'll see a list of CDA files, which are the songs on the CD. Choose the track you want to extract (press [CTRL] for multiple selections) and click 'Open'.



The Tools -> Options dialog ensures that we're working to the UK standard for movie output

Right now, you should have a few scribbles on a piece of paper, or you may have gone a step further and found a use for *Microsoft Excel* beyond complicated mathematical formulae. A simple spreadsheet application is the perfect host for a pre-editing planning sheet. It can be used to store information about your chosen clips, such as length of clip, motion only and sound only. This is an opportunity to categorise your clips into key moments and this is not a waste of time. A good plan and a solid structure will reap rewards.

Discipline is key. Now that you have your materials and you've thought about your structure and goals, you should set yourself a deadline. Why is this important? It's all

too easy to become bogged down with lots of footage and hours spent in front of your PC with very little to show for it. This is usually because of poor planning, which doesn't apply to our project. We've set ourselves a couple of weeks to get our movie finished and, by hook or by crook, we're going to do it.

Get started

This is it – the preliminary stage is over. You can now go to your Start menu and power up *VideoWave Movie Creator Lite Edition*. Without clicking, run your mouse over the left-hand category called Edit Video. This will change the main page, which in turn will now reveal StoryBuilder and StoryLine Editor.

→ FURTHER INFORMATION

PAL, NTSC and SECAM

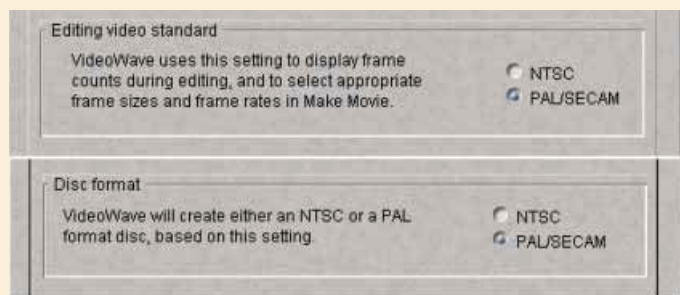
What you need to know about video standards

One hundred more lines are broadcast with PAL (the broadcast standard used in most of Europe and Australia) than with NTSC (National Television Standards Committee), the US broadcasting standard. This means a clearer picture but a downside of a loss of colour saturation, though it's hardly something to complain about

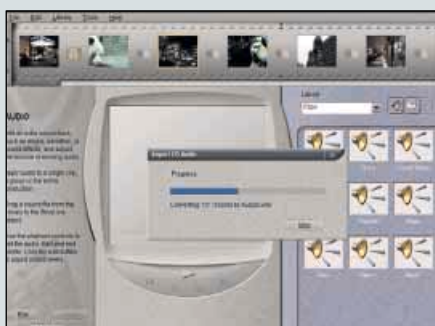
A third broadcasting standard, called SECAM (Sequential Couleur avec Memoire), was created in France and, although it has the same display rate as PAL, it has a much more consistent colour saturation.

HDTV (High Definition Television) will eventually supersede all of these standards. It's been around for some time now, but will become more popular in future, especially as the benefit of having twice as many lines as PAL and SECAM becomes universally accepted. The biggest downside to HDTV is that you're going to have to buy a television that can display digital broadcasts.

VideoWave Movie Creator Lite doesn't accommodate HDTV, but you can choose either PAL or NTSC for your home movie. Bear in mind that they're incompatible with one another.



The default choices displayed here are the UK standard PAL



04 The 'Import CD audio' bar will pop up, displaying the progress. If you selected more than one track from your music CD, the progress bar will show each track one at a time until all are transferred to your library for instant access.



05 When the extraction is complete you can pick up the music sample and drop it on to the StoryLine to correspond with one or more of our clips. The editing of the audio is a separate phase, so go to the tools menu again.



06 By the left-hand side of the main monitor, in the tools menu, your audio options will have a button marked Edit. This will present another section of tools, enabling you to trim your audio, alter the volume, fade in and out and much more.

StoryBuilder is basic and removes the need for any creative impulse on your part. We'd like more control over our project, so we're going to opt for StoryLine Editor. Go ahead and click this. The dialog that pops up asks you to name your project, so we're going to call ours 'Berlin'.

The next screen is the main editing suite. It may look daunting, but it's really quite simple. The screen in the centre is where your film can be viewed, the buttons to the left are your editing tools. The strip across the top of the screen is your timeline (now referred to as the StoryLine), and the colourful palette on the right contains a number of templates. We don't want these, so we're going to create our own library: click Library -> New library.... We're going to store our

clips in here, so we've called it Clips. We can create a further library for images at this stage, too.

The button next to this drop-down menu is used to add elements to your library. We're going to select our images library before we click this, so that we store our stills in the right section (in *Premiere*, these storage libraries are called Bins). Now click the button to import the images into *VideoWave*. Once this is done, repeat the procedure for your raw clips (remember to choose Clips in the Library drop-down before you import).

You'll notice that when you single-click to select one of your clips, a number of extra options become available. These are options to delete your clip, preview it or 'scene detect' (useful for splitting a large clip into

smaller pieces for easier editing).

When you're happy that all of your materials are imported into your libraries, try out the button next to it. This one is for altering the view of your chosen library. For instance, if you can see thumbnail images of your imported clips, click this button for another option, which is to view your clips as small icons.

Order! Order!

Either way, *VideoWave* presents a well-ordered view of your media elements and you can preview them any time without having to drag them away from the library first. This is crucial in order to maintain good workflow. Before we start editing, go to the Tools menu at the top of your screen and click Options. You can leave most of the settings as they are. Just ensure, if you're based in the UK, that your movie is set to PAL/SECAM. This is our standard and will become important when we eventually render and burn our movie to DVD, which is what we intend to do with our Berlin project.

Now you can use your mouse to drag and drop clips or images upwards to the StoryLine strip that stretches across the screen. These boxes are referred to as panels. When you let go of your clip, it'll jump to an available empty panel. Do this with a few clips and drop your clips into the panels in the order you planned.

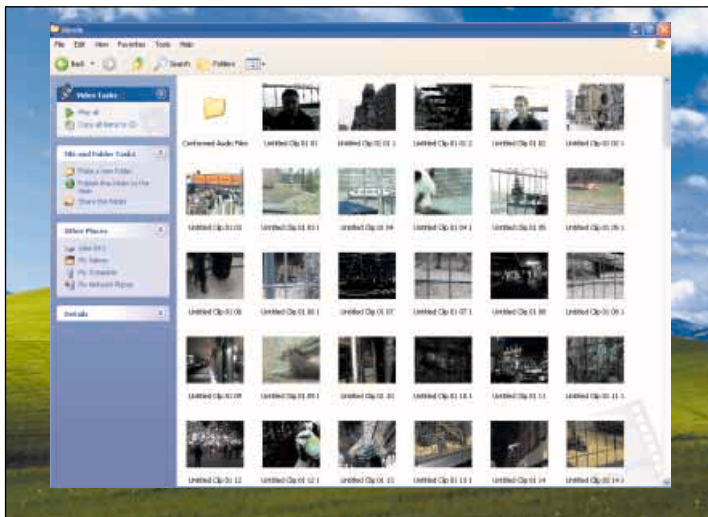
Getting the order of your clips is much more important at this stage than applying fancy effects that

clutter your workspace and restrict your imagination. Keep a clear head and ensure that the raw stuff is accommodated in the StoryLine. Once you've done this and made use of the images in your library, you can think about importing your sound clips and music into their own library. To do this, you need to go to the buttons on the left-hand side and choose Audio.

VideoWave has the facility to rip directly from a CD of your choice, but we like to prepare things in advance. This means that we already have a folder on our hard drive full of the media we want to use in our movie. By pressing the Speaker button (located where the original import button used to be), we can import our music and sounds clips into *VideoWave*, just as we did with our raw footage and still images.

If you feel confident about placing a music track into your movie, go ahead and drag and drop the file from the library to the StoryLine. Don't worry about it defaulting to the beginning of the movie. If you want to have it play somewhere further down the line, this is where you make use of the main preview window in the centre of the screen. You'll see a couple of new buttons below this screen that correspond with the audio you've just chosen to drop into the footage. Press the big green play button and watch your movie in the order you've prepared it on the StoryLine.

When you reach the point where you want the music to begin, click the

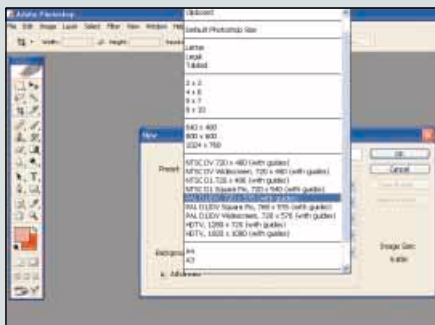


A separate hard drive can act as storage for all raw footage and related editing materials

→ STEP-BY-STEP GUIDE

Using Photoshop CS

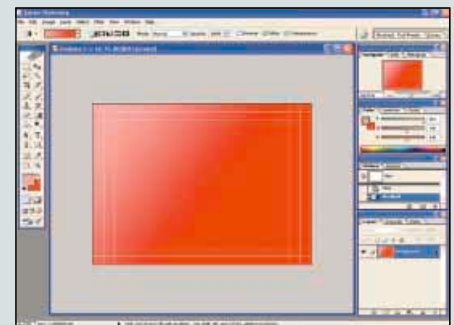
You can prepare your still images for maximum quality output



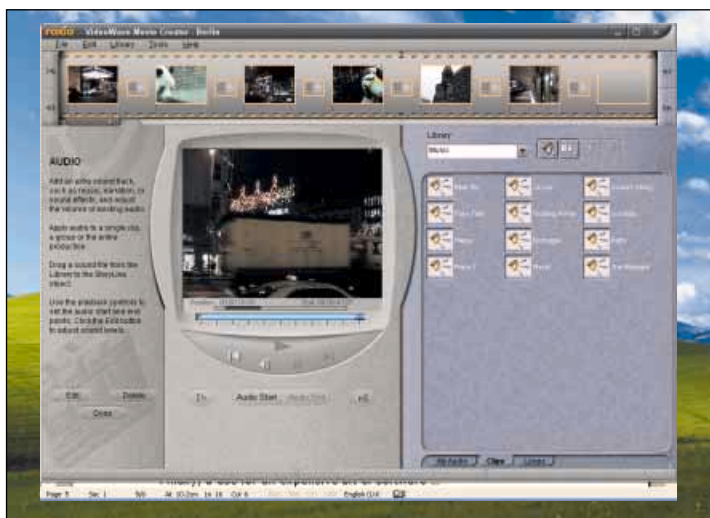
01 An image editor such as *Adobe Photoshop* is ideal for creating images for video. Within the New dialog there's an option for PAL DV, which will create an image 720 x 576 pixels. It's best to opt for the non-square pixel option, as TVs have round pixels.



02 Pixel aspect ratio correction is set by default once you choose the Non-square pixel ratio template. This happens because your computer monitor has square pixels, but you've asked it to display non-square.



03 With a blank canvas available, you can paint safe in the knowledge that the eventual output will fit your movie perfectly. If you want to add text or other images, stay within the 'safe' guides that you can see around the edges.



Drop sound on to the StoryLine and you can manipulate where it appears in your movie

Audio Start button and do likewise if you want it to end at a certain point, this time using the Audio End button. Play the clip in its entirety and pat yourself on the back. You've just created your first home movie in VideoWave, albeit a little on the raw, unfinished side. Finally, press Done.

Smoothly in, smoothly out

The worst kind of home movie is full of unwanted distractions. We're more professional than this. We're not going to spoil our movie with ugly effects. OK, maybe one or two...

Click the Transitions button on the left-hand side and look at your options in the library. A popular and unobtrusive favourite is the simple dissolve, which fades gradually from

one clip to the next. Try it out by dropping it in between your first two clips on the StoryLine. You may think nothing has happened, but it has. Using the main preview screen again, press the rewind button to go back to the beginning of your movie (if you're not already there) and press Play. There's your dissolve effect nestled comfortably between two clips.

You can edit this effect further by selecting it with your mouse in the StoryLine and by pressing Edit in the left-hand tools section. You now have an option that enables you to determine the duration of the transition. This is a useful tool if you're maintaining a certain pace to your film. This will help to keep your audience hooked. Press Done when

→ FURTHER INFORMATION

Spreading the load

Finally, a use for an expensive bit of software...

Believe it or not, you don't have to be a financial genius to use a spreadsheet. If you own a copy of *Microsoft Excel*, you'll find that it's the perfect platform for storing information about your raw footage. This will help you to organise your thoughts, your materials and the details that can make or break your production, and will establish a foundation from which your movie will transpire.

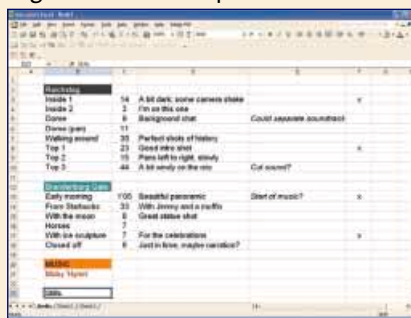
With a definite structure in place, and those elements you wish to use all contained in one easy-to-find folder on your hard drive, you can begin to flesh out your footage and bring all of those separate elements together. Your *Excel* spreadsheet

will offer you an at-a-glance guide to what's what, how long things are and in what order you intend to use them. This could prove invaluable in the long run and will help you maintain pace.

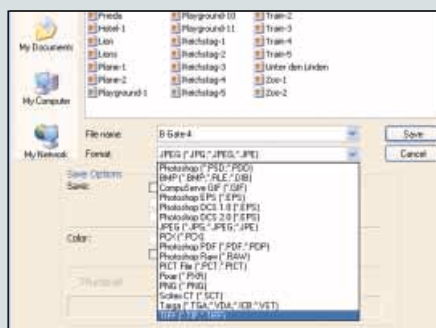
However, you don't have to own spreadsheet software to keep a track of your materials. Professional filmmakers have been known to use a PDA, such as a Zire or Palm handheld. A simple pad and pen will do the trick, although it could get messy if you want to reorder certain shots. The fundamental thing you want to achieve by using these tools is structure. When you know your raw footage well, it can make all the

difference between creating a rubbish sightseeing movie and an absolute corker of a short film.

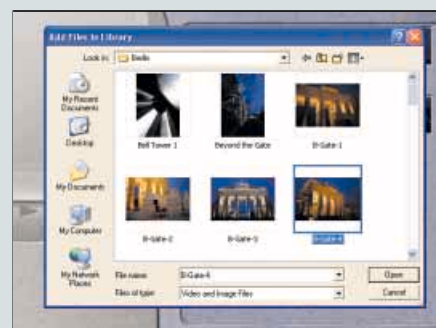
Microsoft Excel is perfect for planning ahead. Note the crosses, which mark footage that's already been placed in our film



04 If you have an image you want to use with your movie, you can change the pixel ratio by selecting Image -> Pixel Aspect Ratio in *Photoshop CS*. There're options for DV PAL, and also Widescreen PAL if your camcorder has true widescreen capabilities.



05 We recommend saving your image as a TIF file, which is a lossless format. This means that it hasn't been compressed by your image editor. Even if your original image was a JPEG, saving it as a TIF will maintain quality.



06 *Movie Creator Lite* recognises the TIF format. Use the image import option to find your image and store it in the library. It's now ready to go into your project and will have the correct aspect ratio according to the PAL broadcast standard.

you've changed the duration settings. Press Done once more and then select one of your clips in the StoryLine. We're going to use the Trim tool to chop the unwanted edges from our best footage.

This tool works very much like the audio tool we used, in that it enables you to set a start and end point for the clip. Right now, you should see your chosen clip in the main screen and the options below it are Mark Start and Mark End. The Mark Start button is greyed out until you move the preview cursor to the point you want to trim. We saw a fabulous panda bear at the Berlin Zoo, but we don't want the blurred bit at the beginning of our short clip. We set our cursor by moving it with the mouse to the point where he comes into focus. Then we press the Mark Start button. We repeat the procedure for the Mark

End button once we've seen enough of our panda. Our clip is now trimmed down from 11 seconds to just five. When we preview our StoryLine again (achieved by clicking the edges of the StoryLine and then the big green play button), our clip is much snappier and looks a lot better than it did. The clips before and after it remain unaffected, and they've 'rippled' to close the gaps. This means that they join the new beginning and the new end of our panda clip automatically.

The importance of pace

Good use of simple transitions can help to punctuate the fluency of your film, so that if you're projecting landscape images or slow-moving objects, or you want to instill a sense of reflection, a slow dissolve works wonders. Overuse of flashy transitions is a distraction our viewers can do

without. The same applies for the zoom function.

Many camcorders these days come with optical and digital zooms. You should consider turning it off if you have one. You don't need it, and it degrades the final output when you're capturing on to your PC. Stick with the optical but use it sparingly. The more you play with the zoom while in Record mode, the more your viewer will feel sea-sick, and at maximum zoom you'll experience more camera shake. This is why you'll find things like image stabilisation, which is a fancy feature that compensates for the excessive digital zoom. Instead, spend your money on a camcorder with less frills but more megapixels. If you can afford it, go for a 3-CCD model.

It's so easy to get carried away with the grand plan in your head. You should resist the urge to jump ahead

of yourself. By applying effects and editing techniques so early in this learning experience, you risk missing valuable fundamental lessons.

When we revisit our movie next month, we'll look closely at our footage and examine how the editing process is teaching us how to take better shots in the first place – an ideal scenario for a good filmmaker. We'll also look at our options for exporting to DVD, as well as other formats, and we'll polish our film for our intended audience. This includes the creation of effective titles that can make or break the overall style of our Berlin sightseeing short film. ■

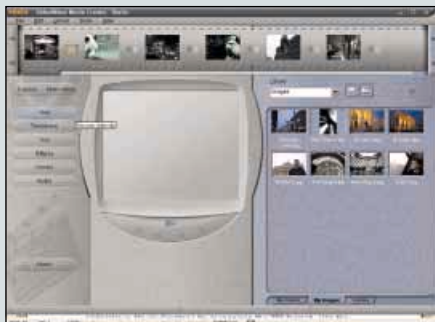
→ NEXT MONTH

How to edit your home movie video files

→ STEP-BY-STEP GUIDE

Using the Trim option

Make the most of the tools at your disposal



01 You may have a piece of music in your film and want it to play in its entirety. However, your video clip might be much longer than the audio track. You can shorten the clip by using the Trim option to match the end of your music.



02 The first thing you should do is watch your clip right through, so that you can assess it for quality. Perhaps the very beginning of the clip is blurred, or the camera moves quite a lot. Bear this in mind when you come to make your cuts.



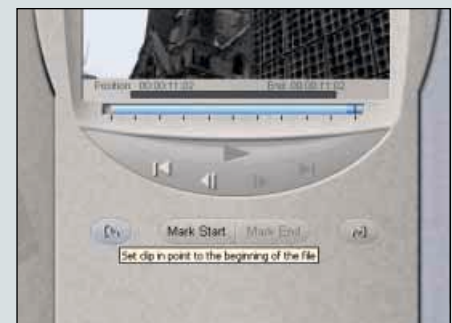
03 The length of our clip is 11:03 seconds, but we want it to be about eight seconds long, and we want it to fade out. Now that we've watched our clip fully, we should press the 'Go to start' button to return to the beginning of the clip.



04 We've used our mouse to move the blue slider to the point where we want our clip to start (at 2:14). The next thing to do is click Mark Start. For greater accuracy, use the 'Go to last frame' or 'Go to next frame' buttons, and go one at a time.



05 Do the same for the end of your clip, but this time use the Mark End button. When you press Done, you can see how long your trimmed clip is just below the main screen. If you cut it too short, you can go back in and edit some more.



06 Press Trim again and you'll be taken back to the trim controls. Remove your original start and end points by pressing the 'Set clip in point to the beginning of the file' and its corresponding button. You can now re-trim your clip.

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→ IN THIS SECTION

Audio Cleaning Lab at a glance	P28
Introduction to recording music	P29
Setting up stereo	P30
Begin recording	P31
Clean and export	P32

→ AT A GLANCE

Audio Cleaning Lab

This software from Magix could be your one-stop shop for audio processing

ON THE
CD

IMPORT

Use this tab to set up the recording of an album, including track detection and recording levels.

TRACK DETECTION

Click here to start the track detection utility, which sets track markers in periods of silence in your recording.

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TRACK MARKER

This marks the break between tracks on your recording. You can set these manually or arrange for them to be detected automatically.

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Check here to see how much space your current recording will take up on a CD.

DECLICKER

These individual noise reduction tools enable you to remove pops, clicks and other specific noise types.

CLEANING

This tab takes care of all the remastering and cleaning up of audio, removing hiss and crackle among other effects.

EXPORT

Switch to this tab to save your tracks as MP3s or WMA files. You can also use it to burn your music to CD.

PRESET NOISE REDUCTION

Use these presets to reduce noise and optimise different recording types, saving you the bother of doing this manually.

MASTER VOLUME

Change the overall volume and see the current levels during playback, courtesy of the level indicator.



Setting up stereo

How you prepare your source media will greatly affect your results

Transferring audio to your PC is easy in principle. You hook your record player or tape deck into your soundcard, play music and run a recording program. However, it's worth considering how you achieve this, because you want to ensure that your source material is as good as possible.

The first thing you need is a turntable or tape deck that can play your old media. Try hunting through the attic for that old stereo you put away but didn't get round to throwing out. You might also find what you need at a garage sale or perhaps you could borrow it from friends or family. Wherever you get your record or tape player from, make sure that it's in a good-enough condition to play your music back well.

Dirty Records

Remember to clean the dust off any LPs before playing them. If your record is particularly dirty, consider washing it. You can do this in clean water. Use bottled water if you live in a hard water area, because the deposits in hard water can affect playback. Use a very weak soapy solution that's lukewarm. Hot water can cause a record to warp. Carefully dry the disc

using a lint-free cloth moving along the groove, not across it.

Whatever you can do to improve playback here will ensure that your final recordings are as clear as possible. Consider cleaning the record or play heads of a cassette deck, or replacing the stylus on the turntable. Use a liquid-based system for cleaning cassette heads.

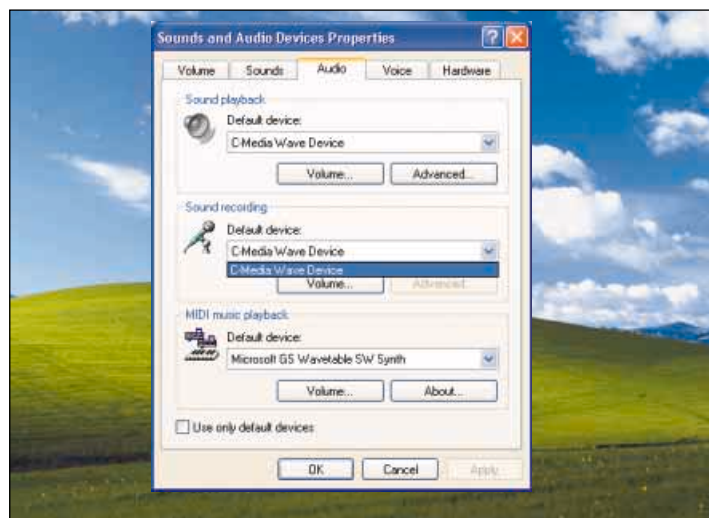
Dry head-cleaning tapes simply grind the record/play head down, which won't improve the quality of playback. If you're borrowing a turntable, a new needle might be the perfect thank you gift.

Connections

You now need to connect your stereo to your computer's soundcard.

Examine the output from the tape deck or turntable. In many stereos this takes the form of two phono connectors, one each for the right- and left-hand channels. If this is the case, you'll need to source a stereo phono-to-stereo jack lead.

This has two connectors for the phono sockets at one end and a single jack connector on the other. This mini jack plug should be connected to the line-in socket of your soundcard. Don't



Ensure that you have the correct device listed for audio recording

be tempted to use the mic socket as this can sometimes result in poor stereo reproduction. If your analogue source has no phono connectors, use the headphone socket instead. This is often a large jack socket. In this case, you'll need to get a stereo jack-to-jack lead and an adaptor to convert large jack to mini jack. Again, most good electrical shops can provide these.

Sometimes, it's not practical to have your sound system and your PC

in the same room. Specialist kit can be heavy and bulky. One option is to buy a long lead to connect the two. This is probably the cheapest solution, although it's not attractive and doesn't lend itself to a permanent setup. An alternative is to employ an audio/video transmitter, which can wirelessly connect your soundcard to the source kit. Maplin (www.maplin.co.uk) stocks the relevant hardware. Just run a search for Audio Sender.

→ STEP-BY-STEP GUIDE

Prepare your record

Clean your records and connect up your player to your soundcard



01 Dust can create pops and crackles. Carefully clean your record as described above. Consider replacing the stylus on your deck to improve playback. Clean the heads of your tape deck if transferring cassettes.



02 Plug your turntable or tape deck into your soundcard, using a stereo mini jack lead or a phono-to-mini jack lead. Avoid the headphone output on your stereo and opt for the aux or line-out if you can. Plug into the line-in socket on your soundcard.



03 Play part of the tape or record. If you can't hear music through your PC's speakers, check your computer's audio settings and all your physical connections. Ensure that the line-in input hasn't been muted on your computer.

Begin recording

Start recording your music and automatically detect individual tracks

With your hardware in the right place, you can now go about recording your tracks. You could use Windows' built-in Sound Recorder to do this. Select Start -> All Programs -> Accessories -> Entertainment -> Sound Recorder. The program works like a standard tape recorder with the familiar Record, Play and Stop features. It captures the output of your soundcard and provides little chance to alter sound levels. It does have the ability to reverse a track, which is a nice party

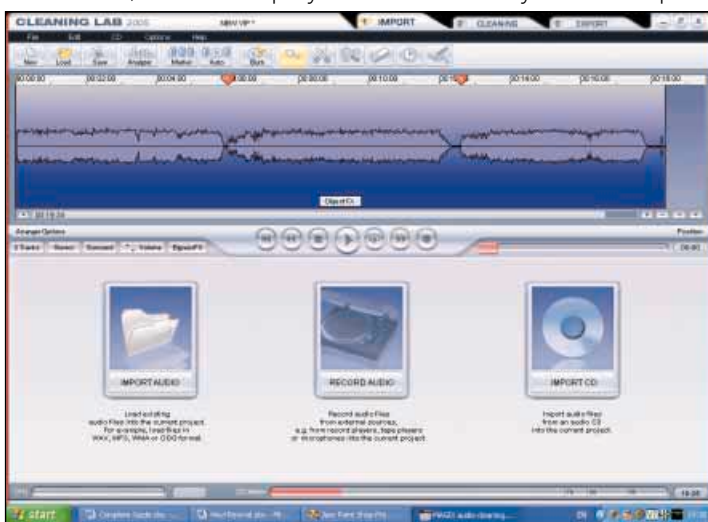
piece but it leaves a lot to be desired if you have much interest in audio.

Thankfully, *Magix Audio Cleaning Lab 2005* is a big improvement over Windows Sound Recorder. Crucially, you can use it to record a whole album in one go and then use it to automatically detect the different tracks. This saves you a lot of starting and stopping and can enable you to run the recording unattended. You can set your PC to stop the recording after a specified time has elapsed. This makes sure that you don't end up

recording silence for ages if you are called away.

When you come to record your music, you need to ensure that it's being played back at the correct level for a successful recording. This is why the Recording Dialog presents the level in a mock LED display. Find the loudest part of the record and play it. This will show you the maximum sound level on the meter. If this is too high or too low, you'll need to alter the recording level in your soundcard. Click

down list, be it vinyl, tape or CD/DVD. You're now ready to start recording. Return your tape or record to the start, click Record and start it off. When you get to the end of the first side, click Stop and turn the tape or record over. Click Record again to resume. Once the second side is over, click Stop and Close. You'll now have the complete album displayed in the upper pane with track markers showing the breaks between tracks. You can opt to analyse the recording again to pick up



Audio Cleaning Lab 2005 puts track markers at points where there's a prolonged silence

WHEN YOU COME TO RECORD YOUR MUSIC, ENSURE THAT IT'S BEING PLAYED BACK AT THE CORRECT LEVEL

Level Control and you'll be taken to the soundcard mixer. If you've connected your soundcard to the headphone socket of your stereo, you can alter the volume on your sound system instead.

While you can use *Audio Cleaning Lab* to detect track breaks in an existing soundtrack, it can carry this out most effectively if you set it up to detect them while recording. You can do this by ticking the box marked 'Autom. CD track recognition'. Now select the input media from the drop-

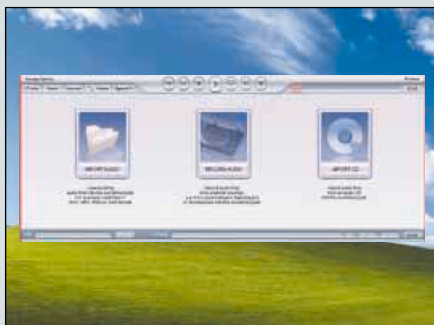
other track breaks or you can put them in manually.

To test your recording, play it using the Transport Control, which provides the usual Play, Rewind and Fast Forward controls. You'll find it in the centre of the window. Pressing [Space] also provides the Play/Stop control. Click the timeline at the top of the recording to jump to different points in the recording using the mouse. At this point it's a good idea to save your project to preserve your editing thus far.

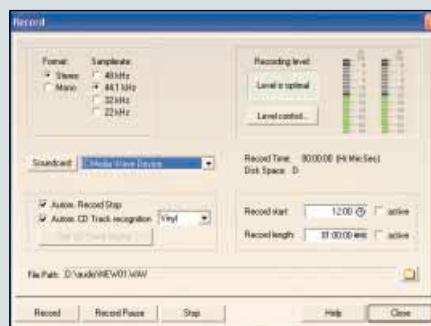
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Musical manoeuvres

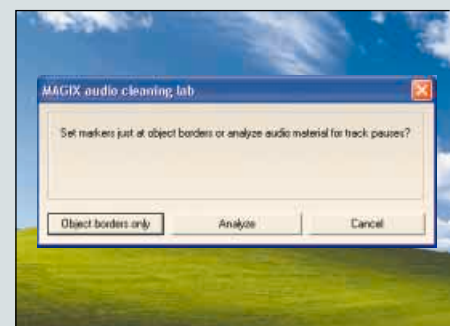
It's straightforward to import your music to your hard drive



01 Launch *Audio Cleaning Lab 2005* and select the Import tab. Now click Record Audio to imports from a tape player or record deck. Ensure that your equipment is set up correctly and start to play your music.



02 In the Record dialog, specify the save location and filename. Check the format and sample rate. Ensure that the Recording level is optimal. Now, rewind your tape or return the stylus to the start of the record. Click Record.



03 At the end of the music, click Stop followed by Close. Choose CD -> Set Track Marker automatically. Click Analyse to find the track breaks. To add more track markers, select where you want them to appear and choose CD -> Set Track Marker.

Cleaning and exporting

Normalise the volume and remove hiss before burning the tracks to CD

In cleaning up your new recording, the true benefit of digital mastering is realised. Click the Cleaning tab at the top of the window. You can either use the wizard that you can access by clicking the Cleaning Button, or the FX section tools that appear in the middle of the lower part of the screen.

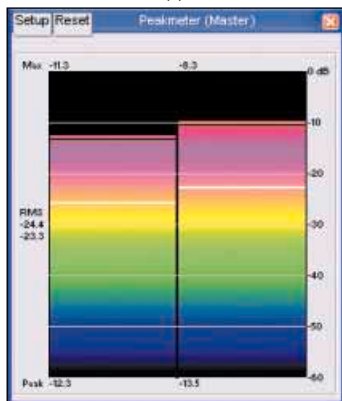
To use the wizard, click the button marked Cleaning and choose one of the options displayed. For records the most useful tools are the Denoiser, the Decrackler and the Declicker. Denoiser removes low frequency bumps, while the Decrackler gets rid of the rustling effect that often appears with well-

worn records. The Declicker should eliminate the effect of light scratches on a record.

Tapes tend to suffer from different problems. Practically all tapes have some degree of hiss. Unsurprisingly, you can remove this using the Dehisser. You'll need to select the form of hiss from the presets and then use the slide control to change the strength of the effect.

If you fancy yourself as a sound engineer, you may prefer to dabble with the FX Section. However, be aware that if you apply an inappropriate filter aggressively you may create artefacts that generate unwanted noise on the final recording. The FX Section sits in the middle of the lower pane.

You can turn each effect on or off. When an effect is turned on its button lights up. The slide control next to this button controls the effect's intensity. If you need to make more adjustments to the effect in question, click the button to its right marked Edit. This opens a dialog that includes slide or dial controls that provide you with greater configuration options. Once you've set up your cleaning effects, these will be applied when you export the tracks. ■



The effects of your editing. Choose Options -> Analyzer Window -> Setup -> Peakmeter

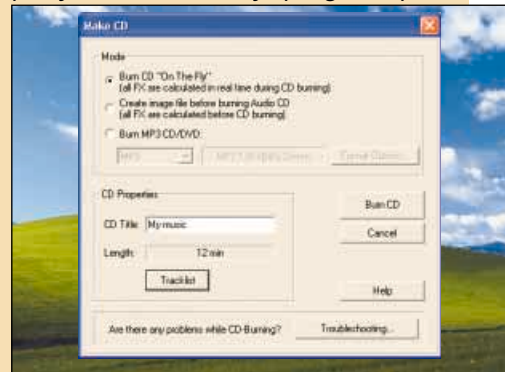
→ FURTHER INFORMATION

Acoustics simulation

Recreate the effect of numerous recording environments without moving a muscle

Once you've cleaned up your music and applied track markers you can put the finished article onto an audio CD. Select the Export tab at the top of the Cleaning lab window. Now click the Audio CD button. This launches a small CD burning dialog. Here you can choose to burn a CD on the fly that applies effects as you go along, or you can create a CD image file before burning the CD. The first approach is faster but requires more system resources. It's a good choice if you have ample RAM and a fast processor. If your computer is quite elderly, opt to create an image file first.

You don't have to export your music to CD. By opting for Export Audio, you can save your track files as uncompressed WAV files or in each of the most popular audio file formats: MP3, WMA or OGG. Select the one supported by your media player or portable music device. You can choose to save this as one file or to save each track as an individual file.



With a fast processor you can choose to burn your CD on the fly. For lower-spec PCs, create an image file first

→ STEP-BY-STEP GUIDE

Control your text

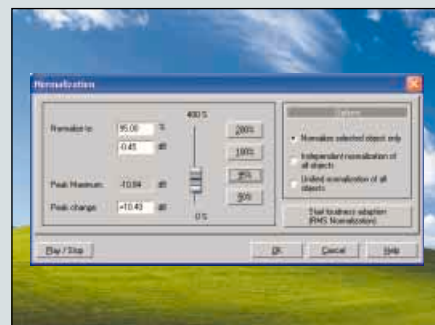
Process your music to equalise the volume and apply special effects



01 Once you have an album recording with the tracks detected, click the Cleaning tab in *Audio Cleaning Lab 2005*. Expand Restore/Cleaning. You can use sliders to optimise your track or pick one of the presets in the left-hand pane.



02 Now expand Optimise/Mastering. Here you can alter the tone, balance and graphic equalising. Select Optimise Volume to make sure that your tracks can play without your needing to alter your media player's volume control continually.



03 Select a volume normalising level using the slider or by clicking one of the preset buttons. These will increase or decrease the track volume. Click OK to apply the change. Press play to listen to your improved track.

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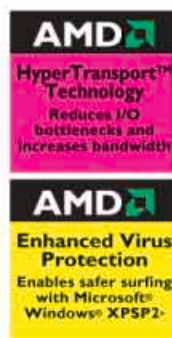
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PC ANSWERS PROJECT

Transfer your home movies from VHS to DVD

Preserve your home videos forever by converting them to DVDs you can play back on any DVD player. Mark Wilson wants to convert us all

The video is dead: it's all but official. You can buy a DVD player for a little over £20 and the fact that at least one high street retailer has stopped selling VCRs altogether, is a strong indication that video cassettes are a thing of the past. However, most people have large numbers of videos lying about the house. If you were to completely abandon the humble video, how would you watch your home movies? This is the problem we're going to tackle in this feature.

DVDs have many benefits over videos. As well as playing them back on a standalone DVD player, you also

have the option of playing them on your computer. DVD writers are becoming a standard feature of modern PCs, meaning that the average home user now has the capability to create their own discs – something that was not such an easy option with videos.

A problem inherent in video cassettes is the degradation of sound and picture. The heads of a video player make physical contact with the tape, which means that every time you play your favourite tape you are gradually wearing it out. Over time this can render the tape unusable – which can be an upsetting situation.

ANY VIDEO FOOTAGE THAT'S STORED ON DVD IS GUARANTEED TO HAVE A MUCH LONGER LIFE SPAN

Video footage stored on DVD is guaranteed to have a much longer life span. The contact-free method of reading DVD data with a laser means that wear and tear is simply not an issue. In this tutorial, we're going to show you how to transfer your home video recordings onto your computer, clean them up and improve them, before burning a DVD. This means that your video footage will last

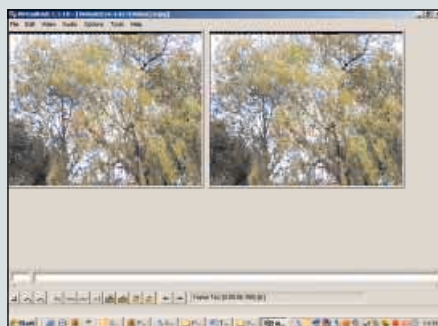
longer, and it'll also be easier to make copies of discs to give to friends and family. You can even throw out the original videos, replacing them with much smaller and easier to store DVDs.

For a number of years now, there have been scores of companies offering to transfer your old videos onto DVD. A handy service for many people, but one that comes with a substantial price tag attached. The

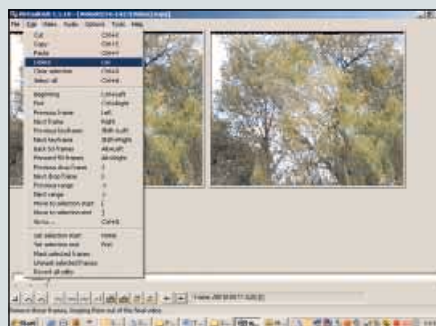
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Improving video footage

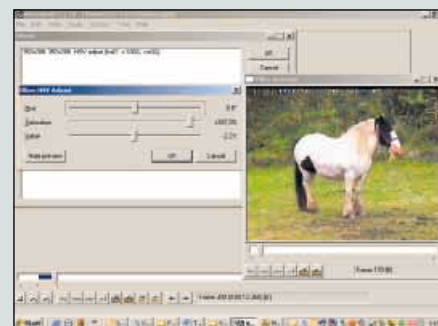
Clean up and enhance your footage with VirtualDub



01 Launch *VirtualDub* and click File -> Open Video File, before locating the footage you've captured. You'll see two video windows – the one on the left shows the original footage while the one on the right will show any changes you make.



02 To cut out footage, move the slider to the start of the relevant section and click the black start point arrow. Move the slider to the end of the footage you want to remove and click the end point button before clicking Edit -> Delete.



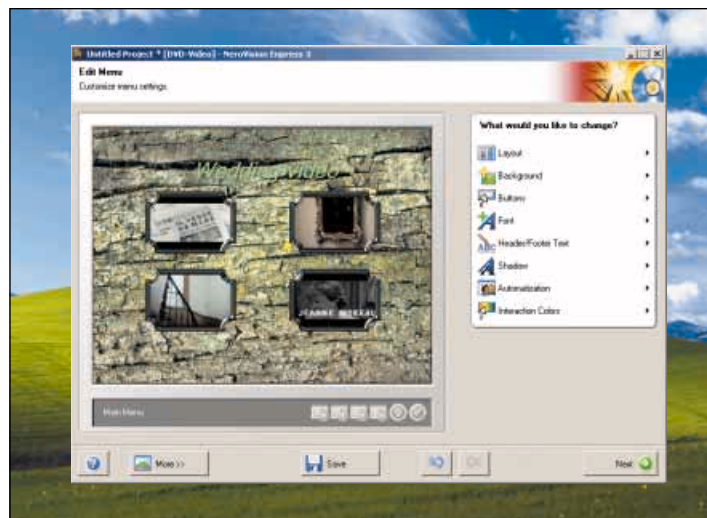
03 The image quality of video footage can degrade over time. Click Video -> Filters and then the Add button to start improving this. To brighten up dull footage select the HSV Adjust option and click Add.

ever-increasing power of computers has meant that the average person can now do many things that they had to turn to the professionals for in the past. Such services are charged for by the minute, so it can turn out to be very expensive if you have a number of videos you want to preserve. The added benefit of the do-it-yourself option is that you can edit the footage to your liking. You can cut out scenes you're not interested in and improve the quality of degraded footage. After all, even the best cameraman shoots footage that he's not entirely happy with.

Equip yourself

You don't need a particularly powerful computer to convert your videos to DVD, but obviously the faster it is, the better. There are, however, some essential pieces of hardware and software required. As we're going to be creating a DVD, a DVD burner is necessary, as is DVD burning software. If you have a DVD burner installed, in all likelihood you'll have the necessary software as well, as the vast majority of drives or computers that include them come complete with a DVD creation tool.

Whether you're transferring footage directly from your tape-driven camcorder, or from your VCR, you'll need the relevant cabling and a TV card installed in your computer, or a graphics cards with a video-in port. A fast hard drive with lots of free



Use Nero VisionExpress to divide your footage into chapters and create a navigation menu

space is also essential. While it's not imperative that you have the speediest hard drive in the world (you can still capture and edit video with a 5,400rpm drive), you'll certainly notice a difference in the amount of time it takes to create a DVD if you're using a 7,200rpm disk. The amount of free space you'll need rests on the format you decide to use to capture your footage. For example, when using an MPEG2 codec we generated a 3.8GB file by capturing an hour and 20 minutes of footage. You'll need additional free space when you come to edit your video file and more still when you come to burn it.

The cabling you need will depend entirely on the equipment you're

working with. The simplest setup involves a VCR and a TV tuner card. All that is needed is a length of standard coaxial, which you can use to connect the aerial out of the video to the aerial of the card or alternatively, you can use the composite video sockets. If your video player features an S-Video port, you should opt to use this instead, as the results will be better. For footage shot with a DV camera, you'll need a FireWire lead to connect your camera to your computer.

When it comes to the TV card itself, there's no need to spend a fortune on the latest and greatest. The vast majority of TV tuner cards, should come complete with all of the software you need to capture video

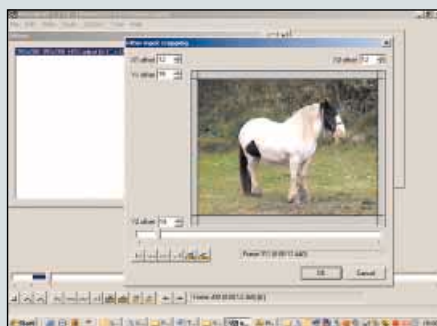
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Capture codecs

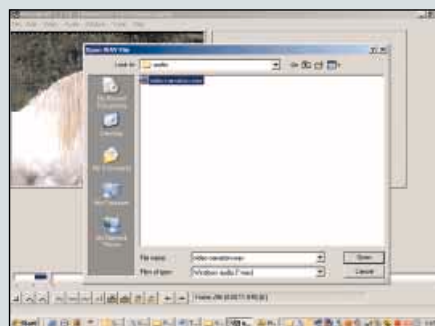
Have you plugged into image-editing?

Codecs are software that are used to encode videos. You might think it would make sense to opt for the codec that offers the highest resolution when you're capturing footage. While this is normally the case, we're dealing with VHS-quality footage in this feature – the resolution of which is quite low – so there's little point using a high-resolution codec.

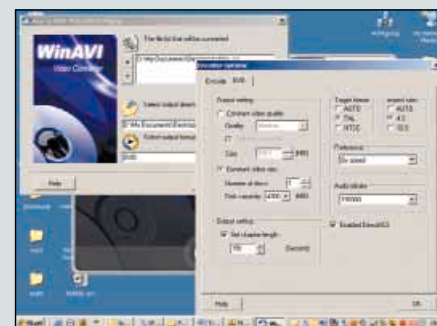
For most purposes you'll find that an MPEG1 codec offers more than enough detail to preserve your videos, and it comes with the added benefit that such footage can be easily edited using free programs. If you want to use a higher quality codec you'll need different editing software such as Pinnacle Studio (www.pinnaclesys.com) or Ulead DVD Workshop (www.ulead.co.uk).



04 You can add filters, such as Sharpen to help with soft-focus footage, or you can use the Cropping function to cut out the edges of a video if they have become too fuzzy. *VirtualDub* also supports plug-ins.



05 If your footage could benefit from a new soundtrack you can add a new wave file to replace existing sound. Click Audio -> WAV Audio and select the audio track you want to use. When you're happy with it, click File -> Save As AVI.



06 Launch *WinAVI* and click the DVD button at the main screen. Select the AVI file you've just created and click Browse to choose where to save your DVD files. Use the Advanced button to choose options, such as the aspect ratio.

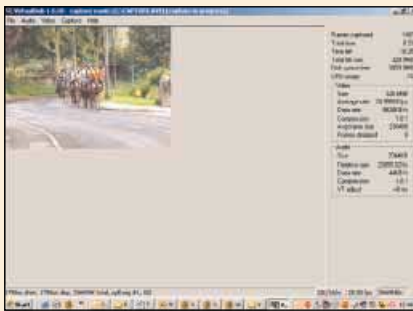
→ FURTHER INFORMATION

Capturing footage with VirtualDub

Do it the adjustable way

For anyone thinking about becoming involved in video editing, there's no better place to start than with *VirtualDub*. While this is an incredibly powerful program, it has one key difference from the majority of other video editing tools: it's completely free of charge. As an open-source program, *VirtualDub* is frequently updated, so it's important that you ensure you're using the latest version. Visit www.virtualdub.org and download the most recent stable version.

Run the program and then click File -> Capture AVI before clicking Video -> Source. Make sure that your TV card is selected in the first drop-down box and that Video Tuner is selected below that. Click the TV Tuner button, select Antenna as the input source and choose the video standard for your country (the UK is PAL_I). Once you've done that, click the AutoTune button and *VirtualDub* will scan for all available channels. When the process is complete, you should use the up and down arrows under Channel to locate



VirtualDub is a great video editing tool for anyone on a budget that wants to edit their video footage

your VCR channel and click OK and then OK again. After that, click Capture -> Settings and Capture -> Preferences to set your recording options and then click Capture -> Capture Video to start recording. You can stop the capture process simply by clicking the video window.

footage – and you may even be able to pick things up cheaper on eBay.

When you're capturing footage your two main choices of capture format are AVI and MPEG. If possible, it's best to opt for the latter as this format is more compatible with DVDs and will need less re-encoding when you come to create your disc.

Whichever you choose, once you have the footage transferred to your hard drive, you're ready to start editing. When it comes to video-editing tools it's possible to spend hundreds of pounds. However, there are a number of free alternatives that not only benefit from a non-existent price tag, but can also be used in as simple or as complex a way as you require.

The two editing programs we're interested in for the purposes of this feature are *VirtualDub* (www.virtualdub.org) and *TMPEnc* (www.tmpgenc.net). *VirtualDub* is a freeware video capture and editing tool, which is covered in more detail in the boxout headed 'Capturing footage with *VirtualDub*'. If you're going to be capturing footage in MPEG2 format, you'll also want to download *VirtualDubMod* (<http://sourceforge.net/projects/virtualdubmod/>), which is capable of working with this file format.

TMPEnc is an essential tool if you want to edit MPEG footage. There's a free version of the program that includes a 30-day trial of the MPEG2

codec you'll need to capture footage at higher resolutions. After this period has expired, you'll need to upgrade to the Plus version of the program (\$37 from www.pegasys-inc.com), though there's also a newer program for MPEG editing called *TMPEnc MPEG Editor*, which costs \$48.

The great thing about *VirtualDub* (or *VirtualDubMod*) is that it supports plug-ins. The version of the program you download from the project Web site at SoundForge includes a number of filters to help you clean up your video footage, but many more are available for download from other sites. As video tapes become worn out after continued plays, one of the problems that affects them is noise. Head over to Rising Research (www.risingresearch.com) and you can download a noise removal filter for *VirtualDub*, which very effectively helps to restore footage to its former glory. Another useful source of plug-ins can be found at <http://neuron2.net/> (look in the Mine section). This site features a list of downloads and a message board where you can find help and swap hints and tips with other *VirtualDub* users.

A DV camera is also an alternative to a TV tuner or other capture card. You can connect your VCR to your DV camera and record the footage before transferring it to your computer. Video encoded with the DV codec can be edited with *VirtualDub*. While the

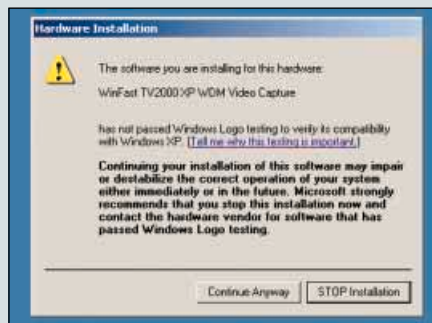
→ STEP-BY-STEP GUIDE

Setting up your TV tuner

Adding a TV card and connecting your VCR



01 All TV tuners can be installed in very much the same way. Open up your case – taking care to earth yourself first – and locate a free PCI slot. Carefully fit the card into place before securing it either with a screw or a clip, closing up the case and restarting your computer.



02 You now need to install the drivers for your TV card. You may find that the hardware is automatically detected and installed by the New Hardware Wizard, but if this isn't the case, simply run the installation routine on the software disc that came with the card.



03 With the driver installed, you now need to connect your VCR to the TV card. Plug in the VCR and use a length of standard aerial cable to connect the RF-out of the VCR to the aerial socket on the TV card. As we're just working with videos for now, there's no need to connect to a main aerial.

program does support the codec, it only works with older versions. Thankfully, there's a workaround. Go to www.bokova.lv/~daliv/video/download/codec/ and you can download a free Panasonic DV codec. When you've extracted the contents of the EXE file, move the resulting pdvcodec.dll file to your C:\Windows\system32 folder.

Edit the Registry

That's not the end of the story; you need to edit the Registry to enable *VirtualDub* to use this new codec. Open Notepad and enter the following:

Windows Registry Editor Version 5.00

```
[HKEY_LOCAL_MACHINE\SOFTWARE\
Microsoft\Windows NT\
CurrentVersion\drivers.desc]
"pdvcodec.dll"="Panasonic DV Codec"
```

```
[HKEY_LOCAL_MACHINE\SOFTWARE\
Microsoft\Windows NT\
CurrentVersion\Drivers32]
"vidc.dvds"="pdvcodec.dll"
```

```
[HKEY_LOCAL_MACHINE\SYSTEM\
CurrentControlSet\Control\
MediaResources\icm\vidc.dvds]
"Description"="Panasonic DV Codec"
```

```
[HKEY_LOCAL_MACHINE\SYSTEM\
CurrentControlSet\Control\
MediaResources\icm\vidc.dvds]
"Driver"="pdvcodec.dll"
```

→ FURTHER INFORMATION

Media box alternatives

The ups and downs of curve adjustments

An alternative to using a TV capture card is to invest in an external capture box. One such device is the Pinnacle MovieBox USB (www.pinnaclesys.com), which is available for around £130. This external box attaches to your computer via USB and you can then use any of the many ports to connect a variety of devices to the box – such as your VCR.

If you have a DV camera, there's also a DV version of the MovieBox available complete with a FireWire connection. Whichever version you go for, it comes complete with a copy of *Pinnacle Studio 9* so that you can edit your captured footage to a professional level. The standard MovieBox accepts S-Video and composite video inputs so that you have the option of connecting a wide variety

of devices to it. The built-in MPEG2 decoder ensures that the footage you capture is of the highest quality.

The inclusion of video-out ports gives you the option of recording edited footage back onto VHS tapes, or you can use the bundled software to create high quality DVDs of your own. As with any such pieces of hardware, it's worth looking around at the cheaper alternatives before you part with your cash, or checking on eBay to see if you can pick one up second hand – particularly if it's a device you're only going to be using from time to time. Such converter boxes are useful if you have an older computer, as the bulk of the video processing is taken care of by the box itself.

Now click File -> Save As and select All Files from the Save As Type drop down menu. In the File Name box, type codec.reg and click Save. Navigate to the folder you saved the file to, and double-click it. When the warning box appears asking if you'd like to add the information in the file to the Registry, click Yes. If you now load up *VirtualDub* and click Video -> Compression, you should see the Panasonic DV Codec list ready for you to use. Another option, if you're working with a DV camera, is to burn directly to DVD using *DVD Santa*. The

program costs \$30, but you can download an unrestricted trial version from www.dvdsanta.com – although any DVDs you create with the trial will have a watermark on them. Launch the program and click the Digital Camcorder Direct To DVD button on the main screen. Navigate through your tape and hit Play And Capture when you've reached the right place. The capturing process will continue until the end of the tape or you can press Cancel at any time. When you've finished, hit the Create DVD button to burn your video to disc.

When it comes to burning your DVD, you have a number of options depending on the format you used to capture your footage. If you're working with AVI footage, by far the easiest way to convert this to a DVD compatible format is to use *WinAVI Video Converter* (www.winavi.com). In next to no time, this handy little program can take your AVI file and convert it to a format ready to be burnt to disc. The software will automatically create the AUDIO_TS and VIDEO_TS folder along with the necessary VOB files you need to burn



01 Before you can proceed any further, we need to get sound from the TV tuner to your soundcard – your card should've come with the relevant lead. Using a standard audio cable connect the line-out socket of the TV card to the line-in socket of your soundcard.



02 You now need to tune in your TV card. Launch its viewing software, then enter the tuning mode. Play a video in your VCR, select Antenna or Aerial as the source and click the auto-tune option. You should soon see the video on the screen and you can then label and save this channel.



03 Now you need to configure the capture settings for your card. We want to save videos using an MPEG1 codec, so select this option. Also, set up your card so that footage is automatically saved to the fastest hard drive you have, or the one that has the most free space. Alternatively, use *VirtualDub*.

a video DVD. You can then use your preferred burning software to burn this to disc.

Nero's a hero

An all-in-one solution for video capture, editing, enhancing and disc creation comes in the form of *NeroVision Express 3*. You may find that this software came bundled with your DVD burner, but if not you can download a trial or buy the software from www.ahed.de. The real beauty of *NeroVision Express* is that it doesn't matter what format your videos are in, as any necessary conversion will be made on the fly. The program also makes it possible for you to join together a number of different video clips quickly and easily, so that you can create a compilation of your favourite home movies.

Before you burn a DVD, you need to check which formats your DVD player supports. You may burn a disc and find that it plays back on your computer, but that it isn't recognised by your standalone player. When creating DVDs of your own, it's always best to use a write-once medium – rewritable DVDs aren't only a lot more expensive, but are often less compatible with standard players. So your main decision is to choose between the DVD-R and DVD+R format, and you'll have to check in the manual of your DVD player to find out which one you should go for.

Over the course of this feature, you should've discovered that preserving your treasured memories on DVD is neither as difficult nor as expensive as you may have imagined. There are so many tools designed to

help you pass through each step of the process that you're sure to be able to find a program that suits your requirements precisely. However, it's not just VHS footage that you can convert to DVD format. If you've used a Web cam or digital camera to capture footage, you may have videos in a variety of formats that you'd like to use to create a DVD of your own. In these cases, there are a couple of Web sites that are invaluable resources for learning about the best way in which to deal with different file formats.

Seeking sites?

Doomg (www.doomg.net) features a number of step-by-step guides to converting videos from one format to another and will help you to decide which is the most suitable tool for the job. A similarly useful site is the

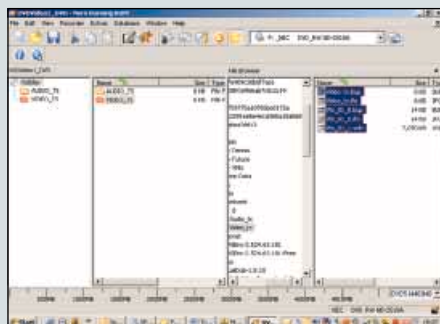
appropriately name *VideoHelp.com* (www.videohelp.com). If you don't have a DVD burner, don't forget that there's always the option of creating VideoCDs. While these have a much smaller capacity than DVDs (700MB compared to 4.7GB), they still give you the ability to preserve your videos in a DVD compatible format.

When you have successfully created your first DVD, you might want to think about being a little more adventurous. If you created a basic DVD with nothing more than the enhanced footage, perhaps next time you could try dividing your video into chapters and creating a disc menu. It's discs such as this that not only enable you to preserve your videos in a professional manner, but also make excellent gifts, which will be cherished by the recipient. ■

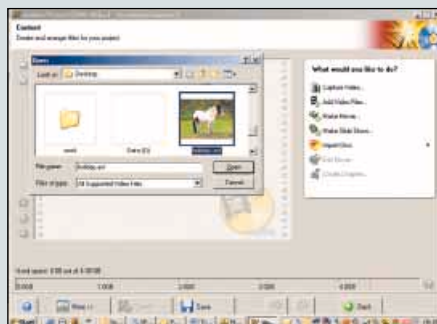
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Using Nero to burn your footage to disc

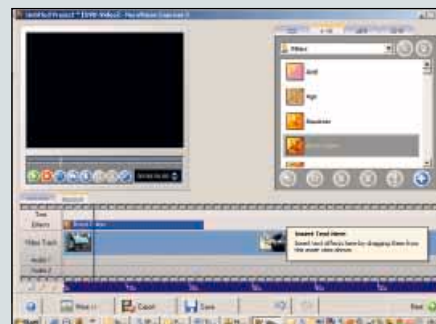
Follow these steps to become a master of footage burning



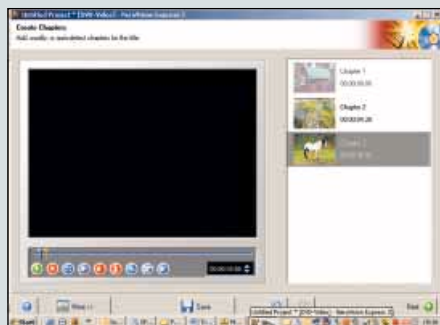
01 If you've used *WinAVI* to convert your video, select the DVD-Video option from *Nero's* wizard. Drag the contents of the VIDEO_TS folder to the VIDEO_TS folder in the left-hand pane of the screen and start the burning process.



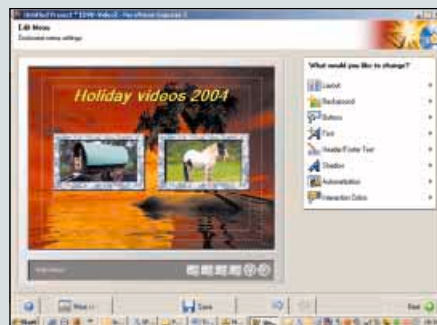
02 You can also use *NeroVision Express*. Launch the program and select Make DVD -> Video-DVD. Click Add Video File and select all of the video you want included on your DVD. If you want to edit any of your clips, select it and click Edit Movie.



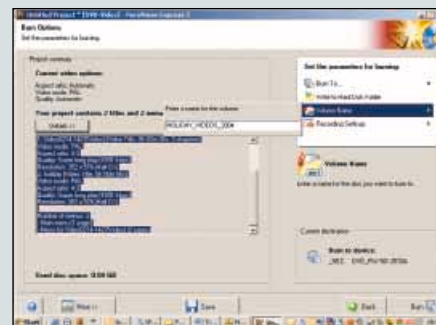
03 Use Cut to take out scenes you don't want, or Split Item to divide a clip into smaller segments. Move to the second tab in the upper right of the screen and apply filters by dragging them onto the clips you need to adjust.



04 When you're happy with the editing, click Next. You can make DVD navigation easier by clicking Create Chapters. Move the slider to where you'd like a chapter to start and click the Add Chapter button. Click Next when you've finished.



05 At the main screen, click Next and you can create a menu screen for your DVD. You can change the appearance of text, video preview, background image and background music. Click Next to preview and test your menu. Click Next.



06 At the final screen you can check details and change things that need adjusting. Use the Burn To menu to select your DVD burner, and Volume Name to give your disc a label. With everything set, click the Burn button at the bottom of the screen.

tiny.com

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It's been over 12 months since the re-launch of Tiny as Tiny.com.

The company has quickly grown to become the UK's No.1 direct PC supplier by offering high spec PCs at the UK's lowest prices.

We ask Brian Trevaskiss, Tiny.com director of marketing what the past 12 months have delivered.



Tiny.com Head Office and manufacturing



Brian Trevaskiss
Director of Marketing
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BT: Our customers simply like the concept. We cut out all unnecessary costs and deliver the best specs at the lowest possible prices. In many cases an identical spec system can cost over £300 more from other suppliers. All our performance measures including website visits, sales calls and unit sales, show an increase every month since launch. We are now the UK's largest PC manufacturer.

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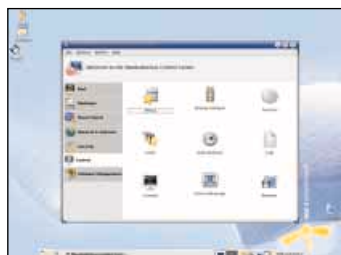
Get more from Linux... Explore your options

Adding users, deleting users and even impersonating them – all in a day's work for Paul Hudson

When you boot your Linux system up, chances are you have auto-login enabled so you go straight to your desktop. While doing this is a great time saver, it may also mean you've forgotten that Linux is a true multi-user system which can have many users configured – and logged in – simultaneously. As administrator of the system, it's your job to create and look after these users, and this month we'll be looking at the tools Mandrake gives you to do just that.

Entering userland

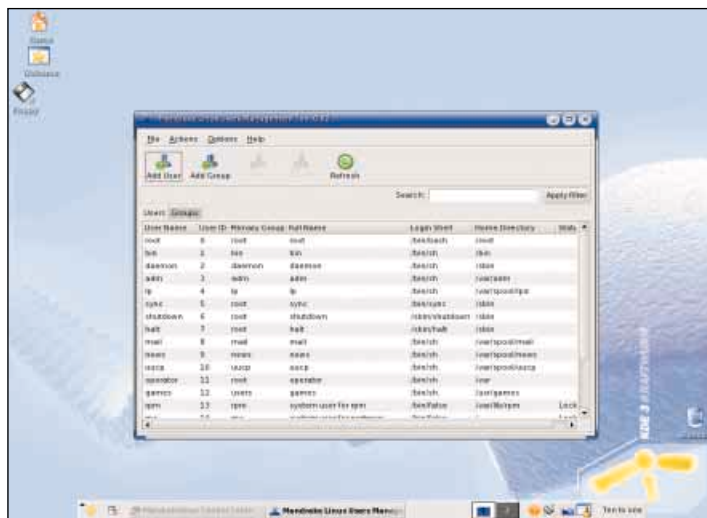
If you've been following our security advice so far, you'll know it's not smart to use the root account for anything other than system administration. The main reason for this is because root has access to everywhere in the system: you can delete any files, spread viruses and so on. On the other hand, as a normal user, 'paul', you can only access /home/paul. However, access permissions on Linux are not so black and white – once we add other users into the mix, we can define directories that some users are able to access but others are not. In



Configure your system through a graphical interface, with Mandrake Control Center

Mandrake, users are controlled through the Mandrake Control Center. The section you want is System -> Users and Groups.

Now comes the explanation part. The user management tool shows you six pieces of information about every user, and you should understand what each of them mean. The username you already know: it's the user you created during installation for normal system access, for example 'paul' or 'bob'. User ID is the numerical ID given to each user internally and you ignore it. Primary Group specifies the initial group a user belongs to. Groups enable you to lump together users by permissions. So, rather than saying 'Bob, Sally, Pete, and Joe have access to



Linux has many hidden user accounts to control access permissions for basic services

the directories /usr/foo, /usr/bar and /usr/baz', it's easier to say 'Bob, Sally, Pete, and Joe are in group "directors", and that group has access to /usr/foo, /usr/bar and /usr/baz'.

The full name field just provides the normal name of the user – this is used when other users query your account. Login shell is the terminal program you want to use – this defaults to /bin/bash, but advanced

users might want to change that.

Finally, you should see the home directory for each user. This defaults to /home/ plus their username, but you can place users anywhere. If you run out of space in /home you can move them elsewhere.

Now you understand what makes up a user, click the Add User button to get started creating a new account. Full name is obvious, but Login is

→ FURTHER INFORMATION

Graphical root

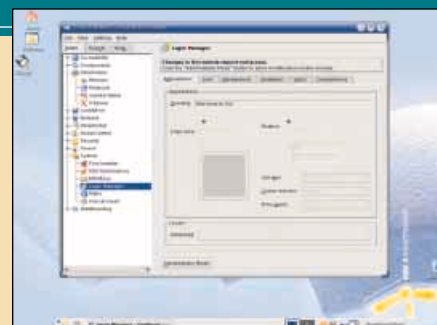
Find out what you can achieve with the Bash shell for Linux

Working as the root user isn't all about typing arcane commands into a terminal. For example, the KDE Control Centre has a variety of tools to configure the desktop look and feel – all things that just affect the current user. However, you can also use it to configure KDM, the KDE Desktop Manager that handles user authentication as well as other tasks. As changing KDM affects the whole system, you need special privileges: you need to be root.

Fortunately, you can switch to root from inside Control Centre. To test this out, go to

the System option on the left-hand side and select Login Manager. By default, you'll see a warning at the top – 'Changes in this mode require root access' – and there's a button at the bottom marked Administrator Mode. Click that and you'll be prompted for the root password to continue. When successful, you'll see the same Login Manager configuration screen, but this time you can make changes to the fields.

The nice thing about running as root in this way is that the minute you go to a different configuration screen, you lose your



When working in the KDE Control Centre, make system-wide changes by clicking the Administrator Mode button

root access and return to being a normal user. This prevents you from damaging your system if you happen to forget that you're root.

→ FURTHER INFORMATION

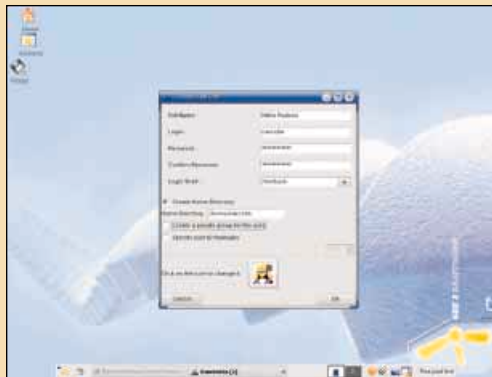
Doing it the console way

If we add three new commands to the mix we can get more useful results

Linux enables you to add users through the console, which ends up being helpful for scripting. You need to be root (naturally), but there are only two commands you want: `useradd` and `userdel`. Before you cower away, relax – both are relatively easy to use. For example, if you want to add a user called bob, just type `useradd bob`. It will also create `/home/bob` and set up the new user with some default files.

To delete that user, type `userdel bob`. By default, `userdel` will leave bob's files intact, but you can change that by using `-r`, for example `userdel -r bob`, which will delete his directory in `/home`.

The set of files each new user gets is stored in the `/etc/skel` directory – any files you place there will automatically be copied into new users' home directories. For example, you might want newcomers to have a readme file in there, stating



When adding a user, the picture at the bottom of the screen is what you want displayed on the login screen

what they're permitted to do, or you could place custom settings in there so new users all start with KDE configured in a certain way. To do this, copy the `.kde` directory from your home folder into `/etc/skel`. Because the folder starts with a full stop, you won't see it when you run `ls`, so use `ls -a` to show hidden files.

where you enter the username. You need to enter their new password twice to ensure it's correct.

If you deselect Create Home Directory, your user will be created and be able to login, but won't have any place where they can create their own files. Consequently, you probably want to leave this selected. If you deselect 'Create a private group for this user', your new account will be added to the default users group, which makes for easier administration on home systems.

When you click OK, your new user will be created. Furthermore, if you gave them a home directory, that directory will be created and have permissions assigned to it so that only your new user (and root) can access it. We can test this by double-clicking the Home icon on the desktop, clicking the Up button to go from `/home/paul` (or whatever your current username is) to `/home`, then trying to enter the home directory of the new user. You should see an Access Denied message.

With a user created, select it and click the Edit button. The window that appears looks like the Add User screen at first, except there are extra tabs now – under Account Info you can set the account to expire after a certain date or lock it completely (so that it cannot be used right now). Under Password Info you can configure Mandrake to force users to change their password regularly, and under



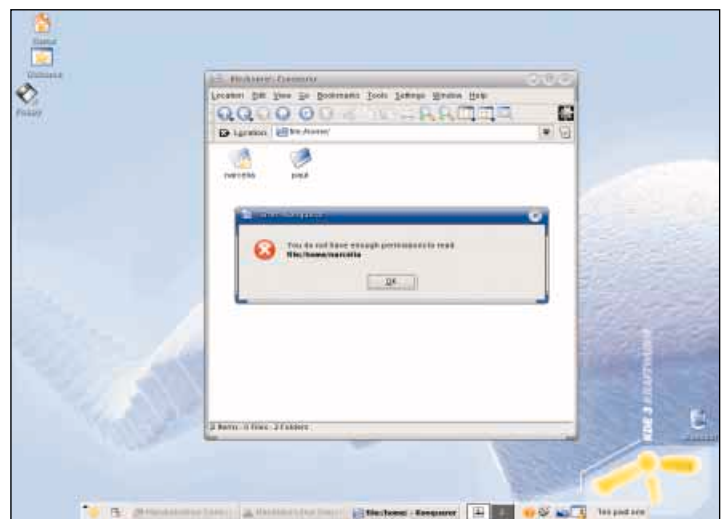
Adding a user? The image at the bottom of the screen is what you want on the login screen

Groups you can place your user into one or more groups to give them different access permissions.

Testing the users

Now, let's test out our users by opening up a console and doing some typing – click Run Command from the programs menu, type `konsole` and press [Return]. The terminal will start you in your home, and so look like this: `[paul@charlotte paul]`. So, we're logged on as paul, on the machine charlotte, in directory paul.

Try changing user to root, using `su`. You'll be prompted for the password. This time the prompt will change to `[root@charlotte paul]`, showing we're the root user, but still in the paul directory. Type `exit` to quit the root shell and return to your normal account. Now try `su -`, which means 'change user and inherit their environment'. After supplying the password, you'll see `[root@charlotte root]`, which means you're root and in



By default, a user's home directory can only be accessed by that user and root

the root directory. Mandrake placed you in your home directory because you asked it to inherit root's environment.

Type `exit` again to get back to being your normal user. Now use `su narcelia` - (or whatever the name of your new user was). Again, you'll be asked for the user's password, but on success you'll see `[narcelia@charlotte narcelia]`. Type `exit`. For your last trick, type this set of commands:

```
su
su narcelia
su paul
exit
exit
exit
```

→ TOP TIPS

LINUX HINTS

- Where does the Full Name get used? Open up a console and type 'finger someuser'.
- If you make a file `.plan` in your home directory, this will appear in your own finger data.
- You can change your password by typing `passwd`, or change another user's by typing `passwd someuser`.
- Stop a user from logging into their account – set their login shell to `/sbin/nologin`.
- If you want to put Gnome files into `/etc/skel`, use the `.gnome2` directory and the `.evolution` directory.
- All files you place into `/etc/skel` have their ownership transferred to new users so that they can customise them.



Introducing Google Desktop Search

Help is at hand if you want to locate lost files quickly. Joe Cassels searches his desktop

If you've ever lost a file, you'll know the value of a good search tool. However, Windows XP's built-in search utility is somewhat lacking. The biggest problem is that the tool is incredibly slow. Given the human capacity for erratic filing and our need to turn up information at the last minute, Windows XP's Search just doesn't cut it.

As more and more correspondence is carried out via email, the need to lay your hands on an important message quickly is increasingly desirable. *Outlook* and *Outlook Express* have find routines, but, again, you need to set aside precious time for these to return results. Thankfully, the purveyors of the Web's most popular search engine

have come to the rescue by providing a search tool for your own computer.

Google Desktop Search works by indexing your computer. This process examines each of your files for keywords and ways to quickly identify them in future. How long this takes will depend on the amount you have and the spec of your machine. You're well advised to open your email

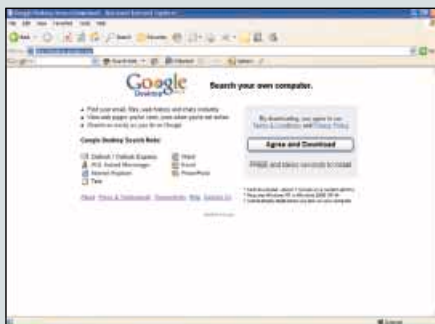
program while this one-time indexing occurs, as your emails will then be indexed too. The index becomes topped up with new files you've added when your computer is idle.

You can use *Google Desktop Search* in exactly the same way as Google's Web search engine, by entering some key words and leaving the rest to the program. ■

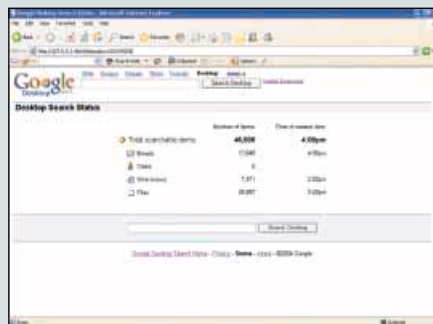
→ STEP-BY-STEP GUIDE

Stop and search

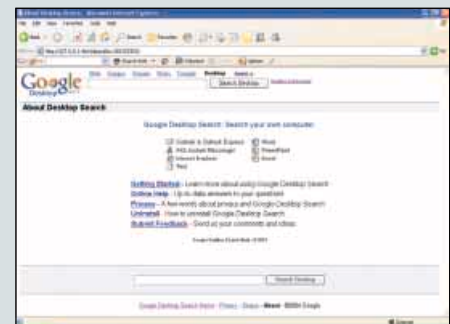
Install Google Desktop Search and find lost files and emails quicker than ever before



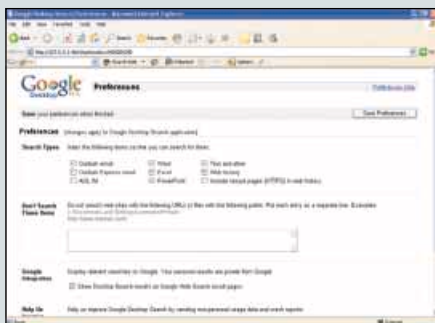
01 Browse to <http://desktop.google.com/> and click **Agree and Download**. Install the program and let it begin indexing your PC. Open your email program so that your existing email messages will be indexed.



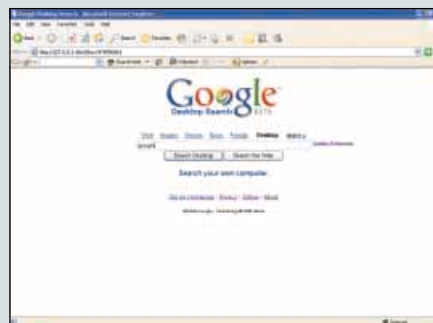
02 Click the *Google Desktop Search* icon in the System tray and then choose **Status**. This displays a list of searchable items on your PC, which includes the total available emails, files and Web history documents.



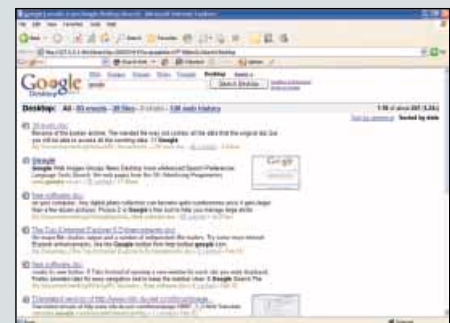
03 To learn more about the search, click its System tray icon and choose **About**. The resulting page provides links for getting started, as well as documents discussing your privacy and online help.



04 Choose **Desktop Preferences**. Here you can specify the items that you want the desktop search to include. Consider blocking secure Web pages from the search and avoid sending usage data if you're concerned about privacy.



05 Click **Save Preferences**, followed by *Google Desktop Search Home*. Now you should enter your search terms in exactly the same way as you would if you were running a Web search. Click **Search Desktop**.



06 Your results include documents, emails and Web history pages. By default, these will be sorted by date. Click **Sort by relevance** to refer more closely to the content of the files. Web pages are displayed as thumbnails.



hack it

Free tutorials! www.pcanswers.co.uk/tutorials
Free support at forum.pcanswers.co.uk

HARDWARE PROJECT

→ Why buy a Media Center PC for silly money when you can upgrade your own?

STARTS ON PAGE 58

'Buying the OS and individual hardware components can save you cash'



SIMON PICKSTOCK
Editor

SIMON'S TIP OF THE MONTH

If your desktop is home to a large number of shortcuts, you can gain quick access to them from any program in XP. Simply right-click in the taskbar and add a new desktop toolbar. Now click on it to see all your icons revealed

→ SECTION CONTENTS



HOW TO UPGRADE IT

Power supplies might not seem terribly interesting, but you need to make the right choice between budget and power for your PC and we can tell you how **PAGE 64**

Feature	48
Build a Web site the easy way	
Hack the Registry	52
Stop changes being made	
Admin Tools	54
Using limited user accounts	
How Windows Works	56
The Windows boot sequence	

DON'T TRY THIS AT HOME
P66



Build a Web site instantly

Want your own Web site but don't know HTML? Dan DiNicolo shows you why it's not a problem, with a look at 1&1's Web building service

→ TOP TIP

KNOW THY VISITORS

Curious about who visits your site? The logs hold the answer

Having your own Web site is great, but how do you know if anyone is actually visiting it? Ultimately, having an idea about who's visiting your site will help you to be more successful in determining what's working and what's not. Your Web site's log files have the info you want and 1&1's service makes digging through this wealth of information a breeze. To access the information in your site's log files, go to the 1&1 admin interface. Click the Applications link and select *WebStatistics*. You'll see a number of options, including visitor information, details on referring Web sites, the pages that your users viewing and a whole host more.

→ IMPORTANT INFO

At the time of writing the UK service wasn't live, so we used the US version. Please substitute any .com URLs seen in the screenshots with <http://www.1and1.co.uk> or <https://admin.1and1.co.uk>

Back in the day, setting up and maintaining your own Web site was tricky business. HTML editing programs went by fancy names like Notepad. Setting up a Web site meant needing to know Windows command line tools and how to interact with UNIX-based Web servers. In fact, even browsers were text-based (remember *Lynx*?). There's no question that life has become easier for those who want to create their own Web site, but challenges remain. Even the best WYSIWYG Web editors will run into stumbling blocks now and again, forcing you to dig through pages of HTML code. Once your pages are complete, you still need to know a little about FTP to transfer your pages to the server. While the tools used to create Web pages may be more user friendly, there's plenty you need to know to put a site online.

If you're interested in creating your own Web site, but have no use for all the behind-the-scenes details that make it happen, all is not lost. It's possible to create a Web site of your very own (with your own domain name), without the need to know about programming, HTML or FTP. In fact, the Instant Web site service from 1&1 makes creating your own Web site no more difficult than walking through a standard Windows wizard. This month, we'll show you how this excellent service works.

Before you can have your own Web site, you're going to need a domain name – such as **kitesandbikes.com** or **johnandmarysmith.co.uk**. Your domain name is the address that other people will use to find your Web site online, as well as send you email messages.



The DynamicSiteCreator tools walk through the process of creating your own Flash-based site.

Having a personal domain name is great for a number of reasons. First, it provides you with a distinct online identity. So, instead of having users send you email messages to an address @hotmail.com, they can reach you via @yourdomain.com.

Additionally, if you have your own business, a personal domain adds both prestige and legitimacy to your online activities. Even if you intend to set up a non-business Web site, a personal domain is still a novel and fun way to have friends and family interact with you, while carving out your own little corner of the Web.

Having your own domain name is useful, but it's only part of the story. In order for others to find your Web site and send you email messages, your domain will also need to be hosted somewhere on the Internet. Specifically, a Web hosting provider's servers will need to act as the home for your domain. This is where your

Web site will reside, and be the server through which email messages sent to you will be received. For details on registering your own domain name, see the boxout on page 51.

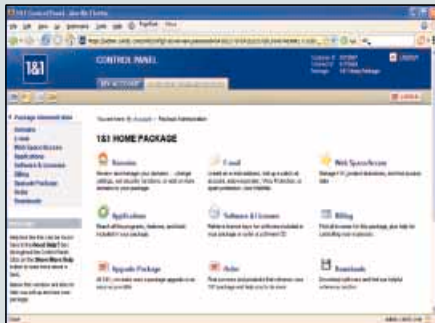
WebsiteCreator

Don't speak HTML? No problem. While you might expect a feature that walks you through the Web site creation process to result in something best described as amateurish, think again. 1&1's *WebsiteCreator* tool isn't for everyone (it only enables you to create sites up to 12 pages), but its results are professional. The built-in templates are top-notch, and you can customise pages to a high degree using the feature's WYSIWYG editing tools. Once you've completed the wizard and customised your site's images and text, it's instantly accessible online. There's no uploading or messing around with folders and the like. Quite simply, we've never seen an easier or

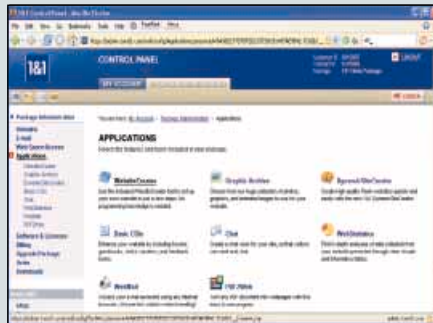
→ STEP-BY-STEP GUIDE

Creating a Web site

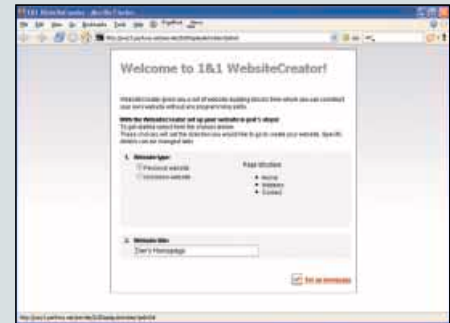
Follow these steps to put together a Web site of your own – no HTML experience required



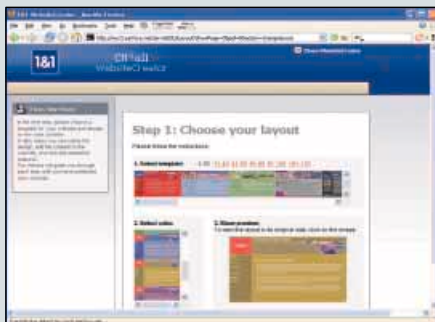
01 Log on to the 1&1 admin interface at <https://admin.1and1.co.uk>. Once you've done that, click your domain name to open the Package Administration screen. This page acts as the administration hub for all matters relating to your domain and Web site.



02 Click the Applications icon. This brings you to the Applications interface, where features and tools related to your package can be accessed. To create a non-Flash Web site, click the **WebsiteCreator** link. Press the Assign Domain button, select your domain name and select Submit.



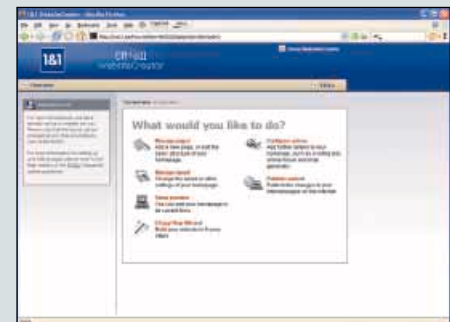
03 With your domain assigned, click the link under WebsiteCreator ID. This will launch the wizard-style interface that walks you through the site creation process. At the Welcome page, select the option for a Personal or Business site, enter a title and click Set up Homepage.



04 At the select template screen, browse through the various site templates, select your preferred option and click Next. Select your preferred settings on the refine design screen, including menu, button and font styles. Once complete, click Next to continue.



05 At the Edit screen, click the Open editor to edit page content link. This will open your site within 1&1's WYSIWYG editor. Click links to open a particular page and then select text elements to make changes. Use the shortcut bar and menu items to change text sizes, fonts, colours and more.



06 Once the wizard is complete, browse to your site's address using your favourite Web browser – your new site should now be accessible online. If you ever need to make changes to your site, just click the **WebsiteCreator** button and select the appropriate option based on your editing needs.

more effective tool for creating such a professional-looking Web site with no real experience required.

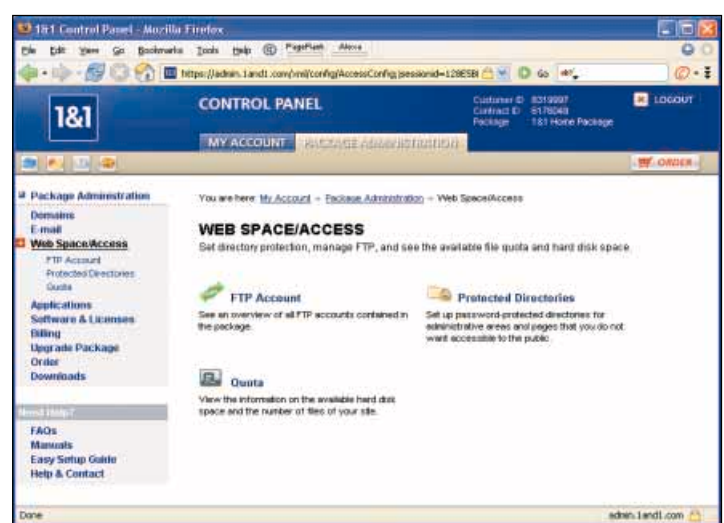
Don't just take our word for it. Follow the steps in the box-out above to create a Web site of your own using *WebsiteCreator*. If you don't have a domain registered yet and want to try before you buy, you can check out a free demo of the tool at www.1and1.co.uk.

Enjoy flashing?

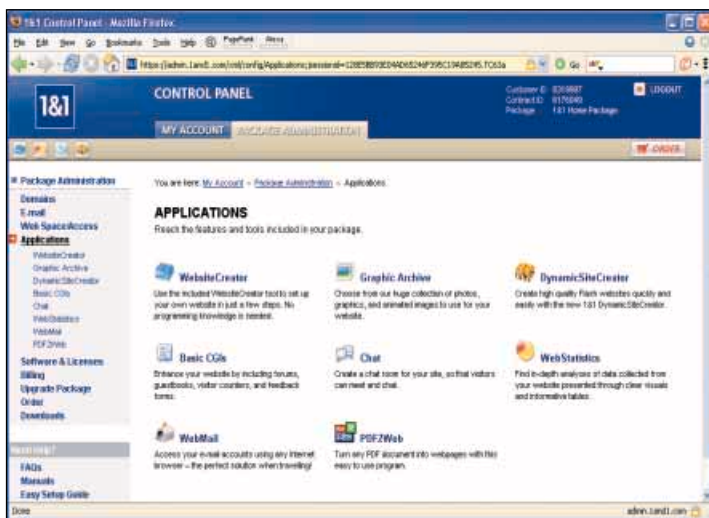
If you like your Web sites to be a little flashier, then you'll love 1&1's *DynamicSiteCreator* tool. This step-by-step wizard and site editor walks you through the process of creating your very own Macromedia *Flash*-based site (again, 12 pages maximum) without the need to know anything about *Flash*. As with the

WebsiteCreator tool, you start by selecting one of the many built-in *Flash* site templates, and then customising things from there. After choosing things like colour schemes, font styles and layouts, you can get down to the business of editing your site's text as well as adding links, images and more.

It's worth noting that you'll have to select one of HTML or *Flash* if you choose to go with 1&1's 'creator' route. For business Web sites, plain HTML is often a better option. However, it all comes down to personal preference. Both HTML- and *Flash*-based sites are equally easy to create using 1&1's tools, so you might want to give both a test drive to see which you like best. Again, a demo of this new feature is available on the 1&1 site.



There's nothing stopping you from creating and uploading your Web site to 1&1's servers the old-fashioned FTP way. Alternatively, you can use 1&1's applications to do it the simple way instead



On the road and need access to your email? It's not a problem when using 1&1 Webmail

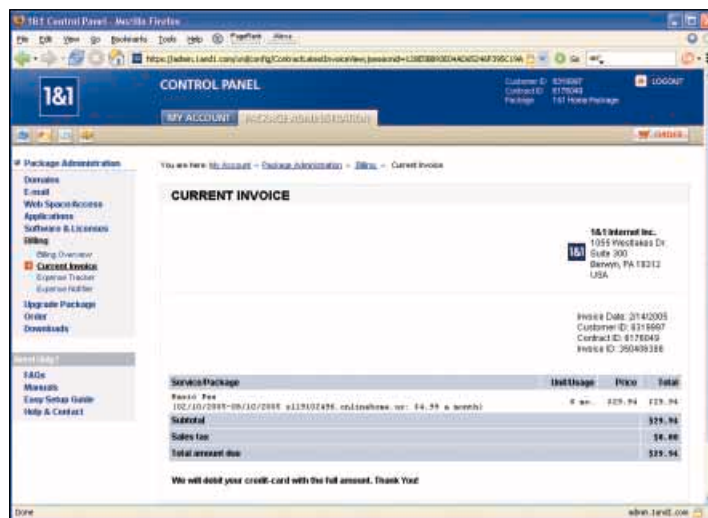
Creating and managing email accounts with 1&1's service couldn't be easier. All you need to do is log on to the 1&1 admin interface and follow the steps in the boxout below to create accounts. As up to 1GB of email storage space is included, free services like Google's *GMail* quickly become less exciting. The space may be the same, but a you@yourdomain.com address has far greater value.

Beyond the mammoth storage allotment, 1&1 also offers a variety of ways to access your messages. Want to download messages to your local computer? Use POP3 access. Prefer to leave your messages stored on the server? Connect via IMAP4 instead. On the road and need access from anywhere? The intuitive Webmail

system at <http://webmail.1and1.co.uk> should do the trick nicely. In addition, even the most basic 1&1 hosting packages include the ability to set up as many as 300 email accounts for your domain – think friends and family here. You can also enable server-based *Symantec AntiVirus* protection for up to five mailboxes at the click of a button. Add integrated anti-spam protection for all accounts, and you've got one heck of a deal.

Going old school

Experienced users need not worry. You have the option of forgoing 1&1's wizard-based tools and carrying on as always – designing your site using your favourite Web editing tool (*FrontPage* or *Dreamweaver*, for



Access the Billing section of the administration interface to keep tabs on your account

AS UP TO 1GB OF EMAIL STORAGE SPACE IS INCLUDED, FREE SERVICES QUICKLY BECOME LESS EXCITING

example), and then uploading content to 1&1's servers via FTP.

If you intend to go the traditional route but still want to test out 1&1's *WebsiteCreator* or *DymanicSiteCreator* tools, by all means take them for a spin. However, when you want to get down to business and actually begin accessing your account via FTP, it's worth noting that you'll need to unassign your domain from whichever of these tools you've been testing, and then create a new home directory for your site via Domains -> Edit destination. Once the change has

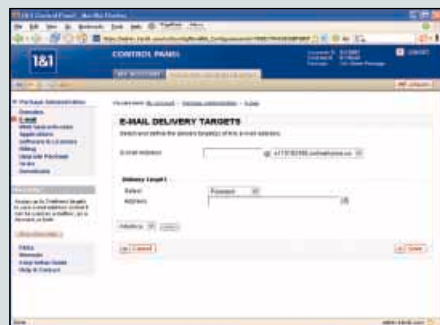
been made, it can take up to ten minutes before proper FTP access is available to you. Furthermore, if you plan on using *FrontPage Extension* to manage your site, keep in mind that after enabling them (again in the Domains section) it can take up to three hours for them to be installed correctly. *FrontPage Extensions* are not enabled on domains by default, mainly for security purposes.

1&1's administrative interface includes a wide range of extras. In the Applications section you'll find a massive graphics archive with

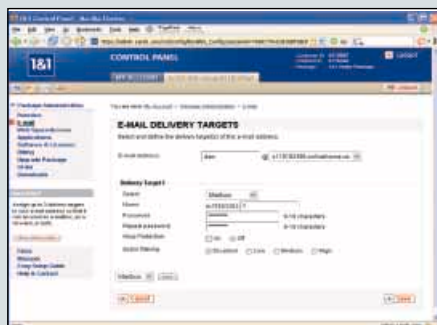
→ STEP-BY-STEP GUIDE

Creating email accounts

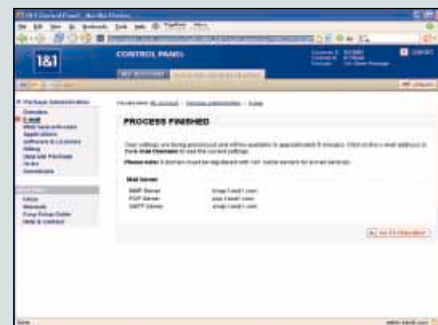
Follow these steps to set up email accounts for your domain



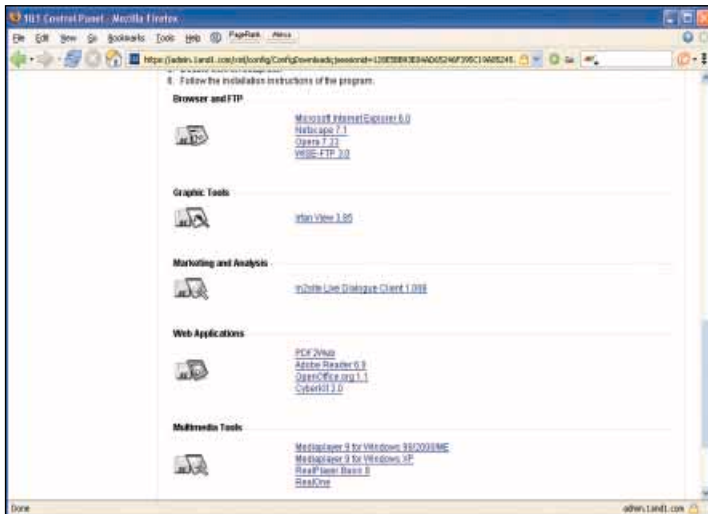
01 Log on to the 1&1 administration Web site. Click your domain name and then select E-mail. At the E-mail Overview page, click the Create a new email address link to open the E-mail Delivery Targets screen as shown above.



02 Type a name for the email address, and select a domain if you have more than one. In the Delivery Target1 section, choose Mailbox in the Select drop-down menu. Enter and confirm a password, and enable spam and/or virus protection.



03 Click Save to create the account. At the Process Finished screen, server details for the account (IMAP, POP3 and SMTP addresses) will be listed – use these values to configure your email client.



Check out the Download page, where you'll find useful software for managing your site

hundreds of high-quality images that you can add to your Web site. If you want to add real-time chat capabilities, you only need to enable the feature and then add a link to the chatroom on your site. Even adding common CGI scripts is a breeze.

With only a few clicks you can enable a forum or guest book script on your site. You don't need to know a thing about Perl or any other scripting language, either: just select the options you want, make modifications via the 1&1 Web interface and save the changes. The system will provide the links you need to add to your site to enable your visitors to access these cool features.

You'd also be wise not to overlook the excellent billing details integrated into 1&1's admin interface. Whether you need to generate invoices or want to track site bandwidth expenses, this tool gives you the financial information you want with no fuss or hassles. Beyond integrated development and

administrative tools, the 1&1 service also includes access software that helps you manage and promote your Web site. Included in this £400+ package are titles like the *NetObjects Fusion 8* Web editor, *PhotoImpact XL SE* for editing digital images and photos, *Hello Engines 4.0* (software to automate the process of submitting your site to search engines), *Ranking Toolbox 3.0* (a site analysis tool) and *Wise-FTP*, a powerful FTP client package. These are on top of a number of helpful free packages available for download from the site, including the latest version of popular Web browsers, media players, the *Adobe Acrobat Reader* and more.

Final thoughts

1&1's service has something for everyone wanting their own site, from the newest newbie to the wildest hack. Again, don't take our word for it. Check out the 1&1 Web site, take the tools for a test drive, and see for yourself. ■



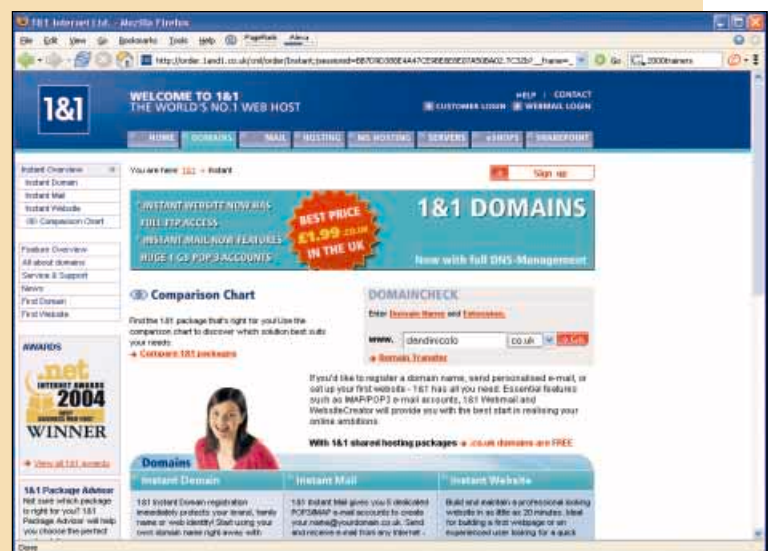
Need a great cow picture for your site? If so, you'll love 1&1's awesome graphics archive

→ FURTHER INFORMATION

REGISTERING A DOMAIN

Why be you@gmail.com when you could be you@you.com?

If you're going to have your own Web site, then you're going to want it to have a good name. This part of things involves registering your own personal domain name. Some people opt to go with their own name (think **dandinicolo.com**), while others choose something descriptive, like **stereocentre.co.uk**. It actually doesn't matter what you choose as your domain name – the only caveat is that the name cannot already be registered to someone else. However, you may want to take a few things into consideration. Is the name you want easy to misspell, for example? Or will it be difficult to remember?



Registering your own personal domain with 1&1 is easy and inexpensive

How can you find out whether the domain name you want is already in use? The easy way is to fire up your Web browser and try to visit the name in question. For example, if you're after **jimboobsmith.co.uk**, then try visiting **www.jimboobsmith.co.uk**.

While this technique will give you a sense for whether the name is already registered, it still doesn't provide a definitive answer. For that, you need to use a tool called Whois.

Whois is the database used to store domain name registration information. When you attempt to register a domain, the registrar checks to see whether that name is already registered. Most domain registration companies (including **www.1and1.co.uk**) enable you to search the Whois database from their site.

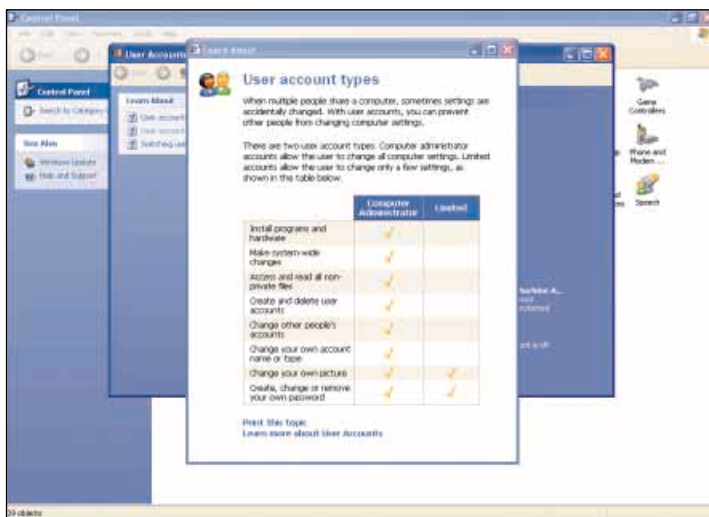
If the name you want is available, your next step is to register it in your name. Companies like 1&1 provide registration services for as low as £2 per year, a price that's hard to beat. You may want to check if any similar domains are registered before you buy, though. For example, if you want to register a co.uk domain, see if there's a .com domain with the same name. If there is, be aware that visitors could accidentally type .com instead of co.uk, so it's worth checking to ensure similarly named sites don't have offensive material on them, for example.

Remember that registering a domain is different than acquiring Web space for hosting. While companies such as 1&1 offer combined domain registration and site hosting services (£5 per month), others may offer only one service or the other.

HACK THE REGISTRY

Restrict software usage and abuse

Prevent the users of your PC from running and installing applications. Paul Townsend leads the prevention course



By editing the Registry, you can further restrict what users can and can't do with your PC

With a number of different users having access to your PC, you'll need to be on your toes where security is concerned. You'll also want to ensure the overall integrity of your system. Application installation and subsequent usage, if it's not monitored, can lead to problems. In Windows XP, the two types of user account, 'Computer Administrator' and 'Limited', go some way to restricting what can and can't be done by an individual. With the help of the Registry you'll be able to take user management one step further. By making changes to keys and values you can determine what software programs can be run on your system. For a home PC, these

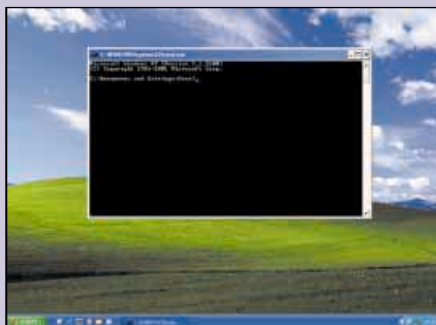
techniques could be put to use by parents who want to restrict the use of instant messaging programs. From a security perspective, it can prevent utility programs from being used that may interfere with the configuration of your PC.

There's a restriction you can put in place that enables you to prevent users from running specific applications and files. Using the Registry Editor, locate HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\Explorer. The value you'll need to edit may not be present, so create it first. If you're using Windows Me, XP or 2000 right-click in the right pane and choose New -> DWORD value then

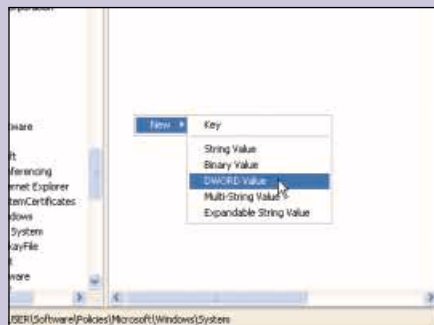
→ STEP-BY-STEP GUIDE

Restrict DOS

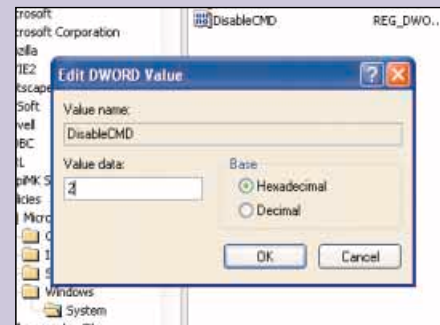
Stop users from accessing the command prompt and running batch files



01 With Windows 2000 or XP you can edit the Registry and disable the command prompt, together with the ability of a user to run DOS batch files. To do this you'll need to go to HKEY_CURRENT_USER\Software\Policies\Microsoft\Windows\System.



02 Here you'll need to create or edit the existing DWORD value called DisableCMD and assign it a value depending on which restriction you want in place. The default value is 0, which will enable the command prompt and the running of batch files.



03 To disable both the command prompt and the running of batch files, you should enter a value of 1. If you want to disable the command prompt but enable batch files then you'll need to set a value of 2. There's no need to reboot.

label it DisallowRun. Give this a value of 1 to enable application restrictions. Next, create a new sub key HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\Explorer\DisallowRun. Within this key, define which applications you don't want to run. For each one, create a consecutively numbered String Value with its own value being the executable file for the restricted application. For example, if you don't want MSN Messenger to be run then set the value as 'msnmsgr.exe'. Repeat the process for each subsequent application.

Those with an older version of Windows can put a similar restriction in place, although the Registry values involved are different. Go to HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\Explorer. Create a DWORD value called RestrictRun and give it a value of 1 to put the restriction in place. Then, create another key, HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\Explorer\RestrictRun, where the restricted applications will be listed. Again, create consecutively numbered String Values and set the value of each one to display the name .exe file.

If you're using an older version of Windows you'll be able to edit the Registry and prevent real-mode DOS applications from being run. This change will stop DOS programs from being launched within the Windows interface. Go to HKEY_LOCAL_MACHINE\Software\Microsoft\

Windows\CurrentVersion\Policies\WinOldApp and create a DWORD value called NoRealMode with a value of 1 to enable the restriction.

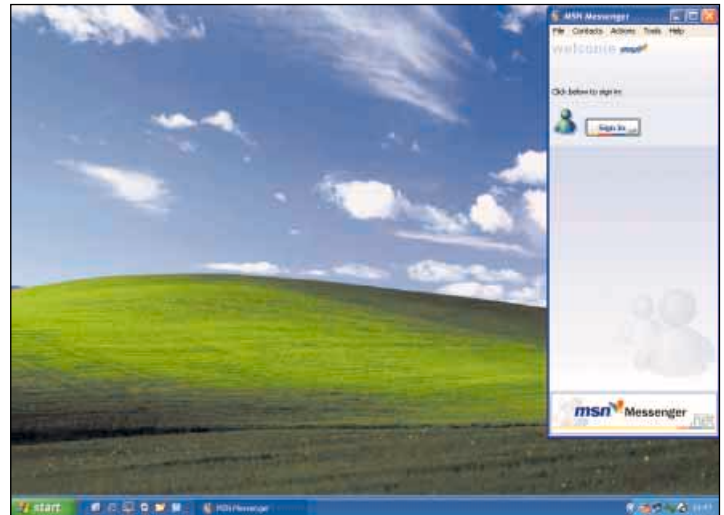
Restricting startup

This next adjustment will prevent your system or an individual user from being able to run the startup programs, by altering the instructions specified in the Registry. To do this on a per-user basis go along to HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\Explorer. Here you should create four DWORD values as follows:

DisableLocalMachineRun, DisableLocalMachineRunOnce, DisableCurrentUserRun and DisableCurrentUserRunOnce. Each one should be given a value of 1 to put the restriction in place. To enable these startup items you can either delete the DWORD values entirely or change their values to 0.

Users who know what they're doing can prevent startup programs launching by holding down [Shift] as Windows loads up. You can disable this. Open the Registry Editor at HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Winlogon. Create a new DWORD value called IgnoreShiftOverride and give it a value of 1.

You'll want to prevent Windows XP users from having access to System Restore. Individuals may be able to rectify problems by using it, but reverting settings using this tool can have an adverse effect on all of the



Control user activity and choose which programs can be run on your system

PC's users. While you can edit the Registry to disable System Restore, it won't affect your system's ability to continue creating system restore points.

Open the Registry Editor and locate HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows NT. Right-click Windows NT, choose New -> Key and label it SystemRestore. Create two DWORD values, the first one called DisableConfig. This should be set to 1 in order to disable the System Restore interface as well as the link to System Restore in Properties. Finally, you should create another DWORD value, this time called DisableSR, and set this value to 1 to remove access to the shortcut on the Start menu that launches System Restore. ■

→ IMPORTANT!

By editing the Registry, you're changing a critical system file. Before making any changes ensure that you've made a backup of your Registry and Windows installation.

PCAnswers can accept no responsibility for loss or damage to your system or data as a result of you following any of the advice in these pages.

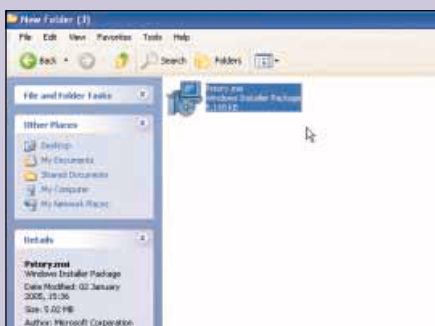
→ NEXT MONTH

Change the appearance of the desktop

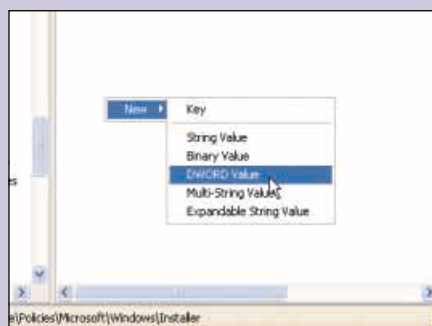
→ STEP-BY-STEP GUIDE

Windows Installer

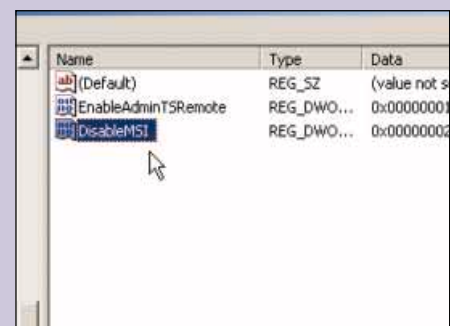
Stop program installation from removable media



01 Further restrictions can be put in place that will prevent users from performing the installation of a program that has a .msi extension from removable media such as CDs, DVDs and floppy disks.



02 In Windows 2000 and XP use the Registry Editor and go to HKEY_CURRENT_USER\Software\Policies\Microsoft\Windows\Installer. Create a DWORD value called DisableMedia and give it a value of 1 to put the restriction in place.



03 For older versions of Windows you can put the same restriction in place. Go to HKEY_LOCAL_MACHINE\Software\Policies\Microsoft\Windows\Installer. Create a DWORD value called DisableMSI and give it a value 2 for the restriction.

ADMIN TOOLS

Limiting user accounts

If more than one person has access to your PC, you'll want to keep each user in check. Paul Townsend walks you through the process

One PC per family member would be the ideal situation, but the reality is usually one machine that needs to be shared by all. In Windows XP, you have the ability to create user accounts that will give individuals their own password-protected login, along with somewhere safe to store their data. A user can also create a personalised view of Windows XP, once they've logged in, that'll remain unique to them. There are two different types of user account that can be created: 'Computer Administrator' and 'Limited'. To ensure that the integrity of your PC is preserved, it's a good idea to have just one Administrator account while all the others are set as Limited.

Tighten security

User accounts in Windows XP make sharing your PC much easier. With the help of individual logins and passwords, each user can store their

own data safely. However, it's possible to make a slight change to the way users login, and make accounts safer from intrusion. The default login method is via the Welcome screen. It displays each user's name along with their picture. Login is achieved by clicking one of them and entering the correct password.

An alternative to this is the Classic login screen, which necessitates the input of a user name as well as a password, acting as an additional deterrent to a would-be malicious user. To switch between the two, go to Control Panel -> User Accounts and click 'Change the way users log on or off'. The only problem with this login method is that the name of the last user to log in is always displayed in the User name field. If you're using Windows XP Professional then you can overcome this problem with the help of the Local Security Policy tool. Click Start ->

Run, type secpol.msc and press [Return]. In Local Policies and settings open Local Policies\Security Options and enable Interactive Logon: Do Not Display Last User Name.

Controlling access

There's a separate profile folder for each user account on your PC. This folder is created the first time a user

place. To do this right-click the folder, choose Properties, select the Sharing tab and check the box 'Make this folder private'.

As the Administrator, it's possible to set different levels of access to the files and folders stored on your PC. This can be done on per-user basis. In Windows XP Professional, there's a system in place called Simple File

AS THE ADMINISTRATOR, IT'S POSSIBLE TO SET DIFFERENT LEVELS OF ACCESS TO THE FILES AND FOLDERS ON YOUR PC

logs into their account. A profile stores all the personal configuration information for that individual, including Favorites, cookies and desktop settings. The folder is stored in C:\Documents and Settings\USERNAME, but is accessible by other users unless you put a restriction in

Sharing that enables you to share data with other users, locally or on a network.

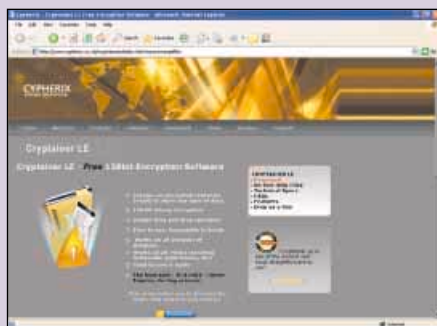
However, it's possible to have more control over permissions for individual users by turning off Simple File Sharing. To do this, open any folder and click Tools -> Folder Options and

→ STEP-BY-STEP GUIDE

Secure encryption

Lock up your files so that you alone have access

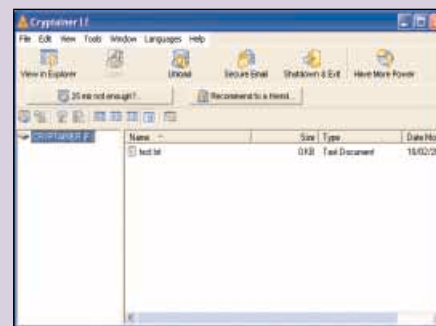
ON THE
CD



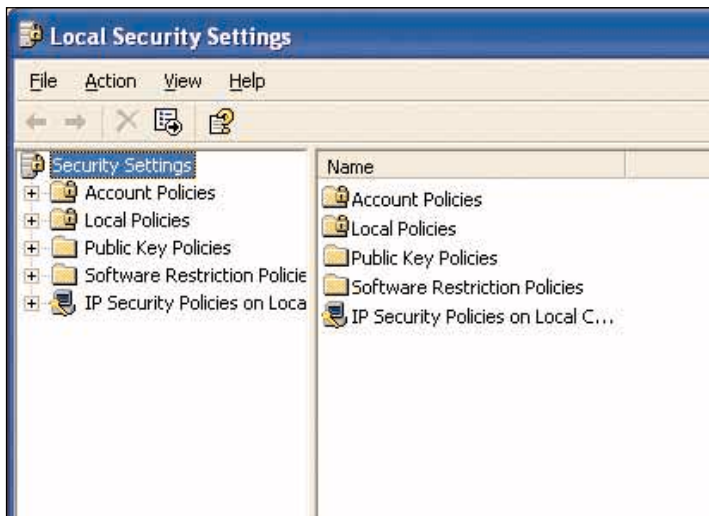
01 If you're using Windows XP Professional Edition you can apply extra security to your files by encrypting them, then protecting the contents with a password. For Home Edition, programs such as *Cryptainer LE* can make things more secure.



02 Use the copy on the disc, or download the program from www.cypherix.co.uk. You can use it to create an encrypted 'vault' where you can save all your important files and folders. This will appear as a new drive letter.



03 When you run the program for the first time, you can set a maximum size for the vault. This is limited to 25MB in the free version of the program. Save files to the vault as you would a normal drive. When you're finished, just close it.



Use `secpol.msc` to ensure that the login name of the previous user is hidden from view

select the View tab. Under Advanced settings scroll down and uncheck 'Use simple file sharing (Recommended)'. Once you've done this, if there's a folder you want to control permissions for, then right-click it, choose Properties and select the Sharing tab. Check the box to 'Share this folder' then click Permissions. Here you'll be able to choose exactly what other users can or can't do with this particular folder. Under 'Group or user names' you should then be able to see a list of all the user accounts on your system.

If the account you want to configure isn't listed, click Add. Under 'Enter the object names to select', type in the name of the user account and click Check Names. After the correct account name appears, click OK and return to the Share Permissions tab. By default, a Limited user account will only have Read access to other files on your system. This technique can prove ideal if you'd like to give a user more freedom. Simply select their name from the list and check the box of the corresponding permission level you wish them to have for that folder. For



Make the documents in your user profile private from other users of the PC

example, you can give them read access and/or the ability to make changes to the folder

Similar permissions can be applied to files as well. Right-click a file, select Properties and choose the Security tab. Again, select the user to whom the permissions are to be applied and check the box to enable access for a particular item. For example, you can apply read-only access, read and execute, or simply Full Control.

If you're using Windows XP Home Edition, you'll find that the procedure

for limiting user accounts won't be as straightforward. Right-clicking a file or folder won't give you access to the options for allowing or denying editing permissions. You can still make the changes but you'll need to do so in Safe Mode. Log in as the Administrator, then locate the relevant file or folder. Right-click, choose Properties and select the Security tab. Here you'll be able to determine how much access a user can have to the particular item. ■



HELP! If you're in a hurry and need to leave your PC unattended, you can create a shortcut that'll log you off immediately. In the command line for the shortcut, type `rundll32.exe user32.dll,LockWorkStation`. Give your shortcut a recognisable name and icon. In future, double-clicking will take you straight to the Welcome screen.

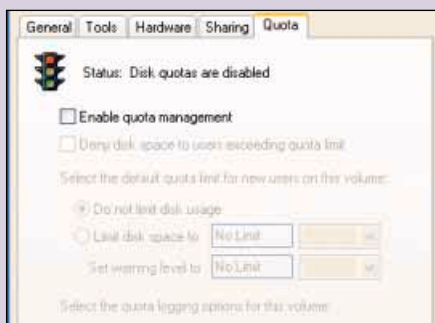
→ NEXT MONTH

Security: configure your PC's administration options to keep out unwanted visitors

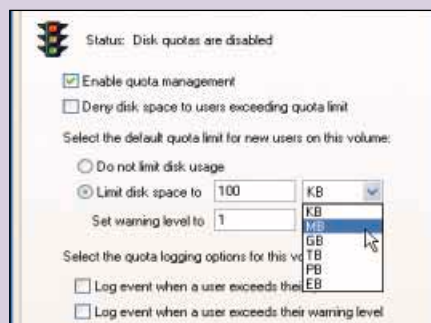
→ STEP-BY-STEP GUIDE

Allocating disk space

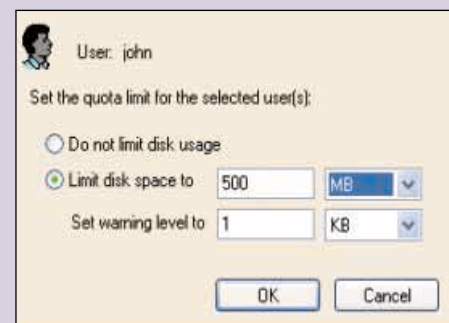
Show your users that it's good to share



01 Another way of limiting user accounts is by implementing quotas so that individuals are allocated a set amount of disk space. Go into the Properties of your drive in My Computer, select the Quota tab and click Enable Quota Management.



02 Click 'Limit disk space to' and enter a level to be applied to all users. You can also set a warning level so they're informed when they're about to reach their limit. Click Quota Entries and you'll be able to set disk quotas on a per-user basis.



03 Click Quota -> New Quota Entry, then type in the name of the user account you want to restrict. Click OK then enter a disk limit for that user, allocating as much space as you feel necessary. You'll be able to set a warning level here as well.

HOW WINDOWS WORKS

Booted out of startup? Kick your way back in

PART 1 of 2 Would you know what to do if Windows wouldn't start on your PC? Panic is one option, but **Mike Williams** has some practical ideas

Turn your PC on in the morning, Windows starts up and your desktop appears. It happens automatically, every time, so you don't care what happens during the boot process itself, unless it starts taking a long time, or you receive odd error messages. Alternatively, and even worse, it doesn't start at all. That's when you wish you knew a little more about how Windows boots.

The process starts outside of Windows, with your PC's BIOS chip. Turn your system on and it starts by scanning your hardware, perhaps running a few checks to see if it's working properly.

Do you want to save a few seconds on your boot time? Then turn off these tests (access your BIOS setup program, look for an option called Fast Boot, and disable it). If your PC seems unstable at some point in the future (spontaneous reboots, say), then turn

them back on again. The BIOS checks aren't very effective, but they may help identify problems with faulty RAM, for example.

After the tests, the BIOS detects the rest of the hardware on your system and performs some basic resource allocation. Its final step is to load the Master Boot Record (MBR) from the first sector on your hard drive. This contains a tiny program that in turn looks for, loads, and runs the first sector on the first bootable partition of your hard drive – and that's where Windows truly begins.

Boot sector

Who says Windows is bloated? It certainly doesn't start that way. The boot sector code has to understand the file system used on your PC, for instance (NTFS? FAT32?).

In Windows 2000 or XP, it must then look for the file NTLDR in your

root directory and display an error message if it isn't there ('couldn't find NTLDR' or similar). If the file is present, then the boot sector code must load it into memory, then pass it control. All this must be squeezed into 512 bytes – a mere half a kilobyte. It's really quite an achievement.

Of course, there's plenty more to do. NTLDR starts in plain old-fashioned DOS mode, for example, complete with the 1MB memory limit, so it begins by switching to protected mode and enabling paging. That gives it access to the first few megabytes of your RAM, which is just enough to begin – but begin doing what? To find out, NTLDR next opens the Boot.ini



Most BIOS setup programs have several interesting options that can influence the boot process. They're worth exploring

file in the root folder of your hard drive. This contains a section called [operating systems] that, as you may expect, lists all the Operating Systems installed on various hard drive

AFTER THE TESTS, THE BIOS DETECTS THE HARDWARE AND PERFORMS SOME BASIC RESOURCE ALLOCATION

→ IN DEPTH

Common boot problems

Windows won't start? Don't worry, here's what to do next

If your XP system won't load properly (or at all), then try booting from your Windows CD instead. Choose the Repair Windows option and you should be able to see the Recovery Console. This looks just similar to the DOS command line, but comes with some extra commands that just might get your PC running again.

If the Master Boot Record is trashed, for instance, your PC will probably display a BIOS message or two, and then simply hang up. Alternatively, you might receive a message along the lines of 'Missing Operating System'.

If you can boot into a third-party program to inspect your partition table, then do so, otherwise simply enter 'fixmbr' at the Recovery Console prompt. The Master Boot Record will be rewritten and you can try starting again.

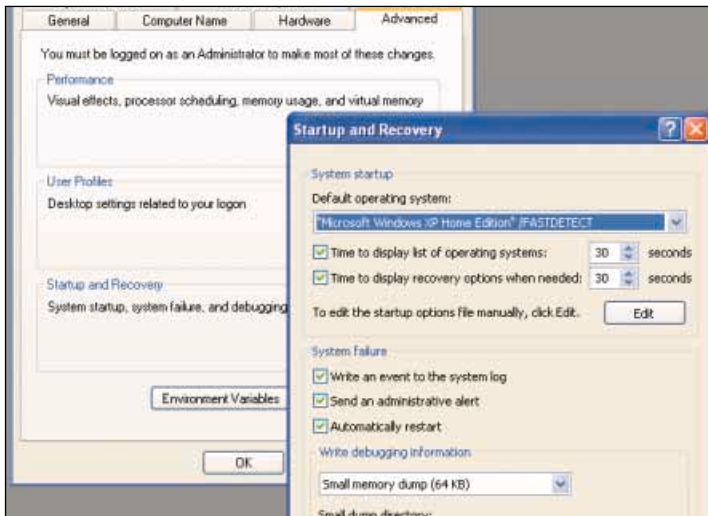
Boot Sector failure can also result in hangs early on during the boot, or complaints about missing NTLDR. This time use the 'fixboot' Recovery Console command, which will (you guessed it) rewrite the Boot Sector.

If you've been a little overzealous in Boot.ini tweaking earlier, then it's possible



Learn about the Windows XP Recovery Console at this site: <http://support.microsoft.com/kb/314058/EN-US/>

for the file to become corrupt, resulting in messages about problems with the boot disk or path. Enter 'bootcfg /rebuild' and the Recovery Console will recreate it for you.



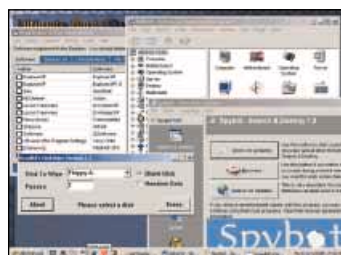
Windows XP hides its configurable boot settings under Control Panel -> System -> Advanced

partitions. If there's more than one entry, NTLDR displays the boot menu and enables you to pick one. If you only have a single entry then NTLDR begins loading it immediately – which may not be a good thing.

Safe Mode

Why might you not want Windows to load just yet? One reason could be because it's not booting up properly. If your desktop doesn't appear, then hold down [F8] as Windows starts, and eventually you'll see the boot menu. This has useful options that could get your system running again.

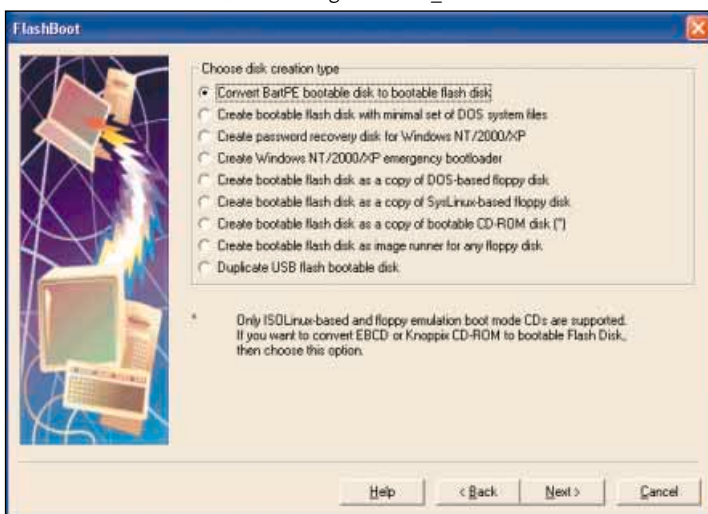
The simplest of these refers to the 'Last Known Good' Configuration. Windows stores your drivers, service and system configuration data in a Registry key called HKEY_LOCAL_MACHINE\System\CurrentControlSet, and keeps a backup of this key from the last time you booted successfully. If you can't boot now, then it may be because of a conflict here, so selecting



The Ultimate Boot CD for Windows could help fix your PC if Windows won't load any more (www.ubcd4win.com)

'Last Known Good' will restore the backup. You'll lose some system-related Registry changes, but Windows should now start properly.

You could also choose one of the Safe Mode options, which tells Windows to load a minimal set of drivers. This should avoid the conflict that's stopping you from booting properly, and give you a chance to fix the problem. Which drivers? That's defined in the Registry (see HKEY_LOCAL_MACHINE\SYSTEM\



FlashBoot tries to make USB flash drives bootable (www.prim-expert.com/flashboot)

→TOP TIP

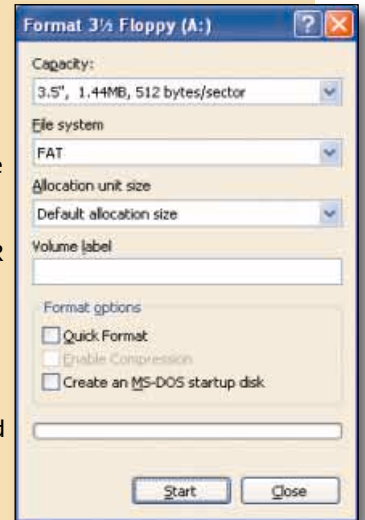
Safety net

You need to make this recovery floppy, right now

The Windows boot process relies on only a handful of files. If one of them is deleted or corrupted then your PC won't start, and making things work again could be a painful experience.

Fortunately, there's a way to create some insurance for yourself. Take one empty, formatted floppy (not a DOS startup disc) and copy Boot.ini, NTLDR and Ntldetect.com across from the root folder of your hard drive. Can't see the files? Launch Explorer, click Tools -> Folder Options -> View, and select 'Show hidden files and folders'.

If these files become damaged and your PC won't start, then boot from the floppy instead. (You may need to change the boot order in your BIOS setup program first.) It'll get your PC started, and then the [operating systems] lines in Boot.ini will point Windows at your hard drive to load the rest of the Operating System. You can then copy the boot files back from floppy to hard drive to fix the problem. Floppies are a little unreliable, of course, so test your boot disc regularly.



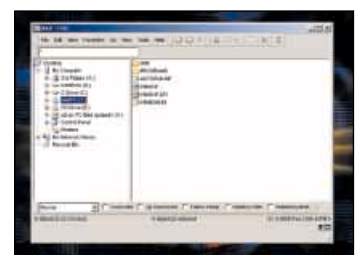
Who said the boot floppy was dead? Every XP system should have one in case disaster strikes

CurrentControlSet\Control\SafeBoot). It's even possible to create custom Safe Modes with more (or less) drivers, depending on your needs, but this is a task for real experts only. The rest of us should take a different approach.

Boot tweaks

In Windows 2000 or XP, open Control Panel, then select System -> Advanced -> Startup and Recovery Settings -> Edit. This displays a copy of your Boot.ini file in Notepad, which will probably contain a line such as 'multi(o)disk(o)r disk(o)partition(1)\WINDOWS="Microsoft Windows XP Home Edition" /FASTDETECT'. This shows NTLDR where to find Windows, adding a switch called /FASTDETECT, which tells the system to enable Plug and Play to detect serial and parallel ports.

There are other useful switches available. If you'd like Windows to log the drivers it loads as you boot add a space and /BOOTLOG to the end of the line. If you've got display card problems, then use the /BASEVIDEO switch. Windows will use the standard VGA driver instead, which means 640 x 480 resolution, but it's better than your PC not starting at all. If you've just added an extra 256MB of RAM



HARDWARE PROJECT

Upgrade your PC to an MS Media Center

Buy the ultimate home version of Microsoft's Operating System and turn your system into a Media Center PC. **Mike Abolins** is your guide

→ FURTHER INFORMATION

Core system requirements

Make sure you've got the right foundations for building a Media Center PC

You won't find an official list of system requirements on the packaging of the Windows XP MCE operating CD, but you can take a good guess at whether your PC is up to the task or not by comparing it to the official Media Center PCs that are on the shelves today. Although Windows XP MCE is little more than the regular Professional edition with extra bells and whistles, it's the uses to which you'll put it that are the most demanding.

As far as the processor is concerned, a 2GHz Pentium 4 or AMD Athlon minimum is a must. As for RAM, we'd

recommend at least 512MB though we'd prefer to double that if possible, especially if you want to make use of the Media Center Edition's full PVR capabilities.

Regarding your motherboard's features, the more up-to-date it is, the better, but it's not the end of the world if it's aging. PCI Express isn't necessary, for instance: the graphics card will happily perform as you want it to sit in an AGP 8x or even 4x expansion slot. SATA connections for your hard drive(s) would be ideal, but again, not essential.

The winter of 2004 saw Microsoft release Windows XP Media Center Edition to the system builder community at large. Whereas previously it was available exclusively to large OEMs such as HP, the expansion program brought it within reach of just about everyone. Now that it's available much more widely, the Operating System is appearing as a standalone purchase on some Web sites. So, in a roundabout fashion, Windows XP MCE has been made available to you as a standalone OS.

The usual riders with that statement apply, obviously. Microsoft does not and will not offer support to individuals who buy Windows XP

simply phenomenal and it's really grown into a viable home entertainment solution. The Operating System's handling of digital photos and audio is already well documented, but Windows XP MCE has also made watching and recording TV on your PC an exciting and – more importantly – achievable experience. The integration of hardware and software is second to none and you can use the entire system and all its capabilities straight out of the box.

It's improved

The Media Center Edition 2005 update further improved matters, catering for multi-tuner support that

WINDOWS XP MCE HAS MADE WATCHING AND RECORDING TV ON YOUR PC AN EXCITING AND ACHIEVABLE EXPERIENCE

Media Center Edition as a standalone product. It only makes it available to system builders and OEMs who incorporate it into a certified Media Center PC. However, you're not doing anything illegal by purchasing the Operating System on its own, so you shouldn't worry about that. It's simply that Microsoft would rather you didn't.

Get a piece of the action

Of course, that's never stopped us wanting a piece of the action before, and as soon as we saw that we could get our grubby mitts on a copy of the Operating System, we went for it. The functionality of Windows XP MCE is

enables you to watch one TV show while recording another to the hard drive, support for digital and HDTV, integrated CD and DVD burning, an improved and simplified interface and better support for home networking. In short, it made a good thing better.

What makes this better thing fabulous is the fact that you can now enjoy all of this on your PC at home via an Operating System and hardware upgrade. Given that OEM Media Center PCs start at around £1,200, buying the OS and individual hardware components can save you a mountain of cash. The one sticking point has always been ensuring the



same tight level of integration between hardware and software, though. That's always been the benefit of buying a Media Center PC off the shelf rather than try and do it yourself with third-party products.

Windows XP MCE took the disparate parts and programs and made them accessible by a single interface and remote control. Well, that's what we're going to do for you now. Thanks to the involvement of www.overclock.co.uk and Microsoft itself, we're able to bring you an exclusive guide to upgrading your existing computer into a fully fledged Media Center PC. We'll show you what you need to do to prepare your PC, which hardware and software products to use, and how to bring it all together into a single cohesive system.

Connectivity concerns

Assuming your system is moderately up to date in regard to its core components (processor, memory and so on) your main concerns will centre on connectivity. Your PC will need to be able to accept a TV feed from

whatever receiver you have, whether it's a simple analogue roof-top aerial or digital satellite system, and output the signal to your television. Between the two it must be able to provide PVR

IT SOUNDS COMPLICATED, BUT WHEN YOU BREAK IT DOWN AND KNOW WHAT YOU NEED, IT BECOMES LESS SO

functionality, too (which is no small matter) and play the recordings back on your TV along with DVD movies and video from the Internet. It needs to be able to handle audio of all types, from 6.1 channel DVD sound tracks to simple stereo MP3s. Crucially, it must be able to do all this from one box and one remote control, as we'll be introducing you to the Windows XP Media Center Remote Control and receiver, too.

Easy does it

It sounds complicated, but when you break it down and know what you need, it becomes less so. At the end of

the day it's about compatibility and installing the right components that will ensure seamless integration. We'll tell you what components we've used and what other options

you have. Microsoft has a list of partners offering compatible hardware and software so that OEMs and system builders can build a complete Media Center PC without hitting any snags and we'll run through this with you, too.

The list of partners and compatible products is growing all the time and you may well own one or more of these devices already. Finally, we'll tell you where you can get your own copy of Windows XP Media Center Edition. Once you've seen what it can do with your existing PC and for how small an outlay, you'll want to take advantage of its availability.

→ FURTHER INFORMATION

Compatible components

Integrating software and hardware

There's no master list of compatible hardware available to punters, but we can point you in the right direction. In most cases you'll not have any trouble as sound cards, hard drives, optical drives and networking gear are pretty much ubiquitous and will work without any problem.

It's the graphics card and TV tuner that are of most importance and you can view a list of recommended models at www.microsoft.com/windowsxp/mediacenter/partners/dfw/partnerlisting.msp.

What you'll need

Four essential upgrades for Windows XP Media Center Edition



The Operating System

£82 – Overclock
www.overclock.co.uk

This is an OEM version of Microsoft's ultimate home Operating System as it's not available as an out-and-out end-user product. This means you're on your own as far as support goes: Microsoft just won't want to know. Aside from this, you'll get everything you need across two CDs. It's the latest 2005 version that includes *Windows Media Player 10* and support for the Portable Media Center devices. It does not, however, include Service Pack 2, so be aware that you'll need to activate automatic updates when you're up and running.



Microsoft Media Center Remote Control

£26 – Overclock
www.overclock.co.uk

No other infra-red remote control has so successfully been incorporated into Windows. It'll do nearly everything you could with a mouse and it'll also operate your television set and Sky or cable TV digibox, courtesy of a secondary remote dongle that plugs into the receiver. Given its importance, it's relatively inexpensive, too, which makes it even more attractive. It'll only work with Windows XP MCE, though, so don't buy it expecting it to work with your existing XP installation.



Sapphire Radeon 9600XT All-In-Wonder

£180 – Overclock
www.overclock.co.uk

You don't have to connect your upgraded Media Center PC to a television set. However, unless you've got a swanky LCD or plasma screen, you'll be watching *EastEnders* and *Ground Force* et al, on a TV in your living room, and that necessitates a flexible graphics card. Few are as flexible as ATI's All-In-Wonder series and the 9600XT is no different. The analogue TV tuner enables you to take advantage of MCE's dual-tuner capabilities, enabling you to record and watch two channels at the same time.



V-Stream Xpert DTV Tuner

£61 – Overclock
www.overclock.co.uk

Although it can't decode a Sky Digital broadcast (because no card can) the V-Stream will handle Freeview digital terrestrial TV, though nothing that requires a viewing card. You can run a Sky digibox through the card which will treat it as a single channel; you can use the Windows XP MCE remote control to operate your digibox so you're not at a huge disadvantage. The major benefit of the TV tuner is the time-shift facility that enables you to pause live TV and record broadcasts to your hard drive as an MPEG2 file.

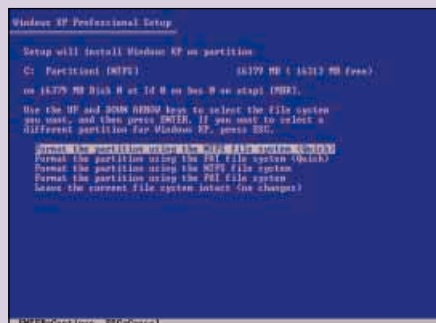
→ STEP-BY-STEP GUIDE

Let the Media Center revolution begin...

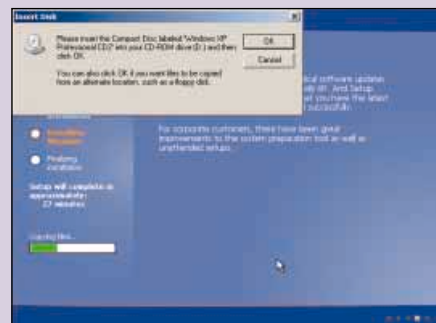
Install and set up Windows XP Media Center Edition without falling at any hurdles

Before starting the installation and setup of Windows XP MCE, install the necessary hardware upgrades. Windows drivers will be loaded by the OS during installation so don't worry about swapping out more than a couple of components at a time. You'll need to activate the Operating System as it's new, but you can do this up to 30 days after the initial installation. It's best to fully update Windows, your software and your hardware before you start setting up the Media Center software.

You'll need to run Windows Update at least three times to get all of the updates, as well as downloading the latest drivers for your graphics card. You should also make sure that you've got all the cables you're going to want, particularly ones for connecting your TV and other existing home entertainment devices. The cables you'll need are readily available from electronics stores.



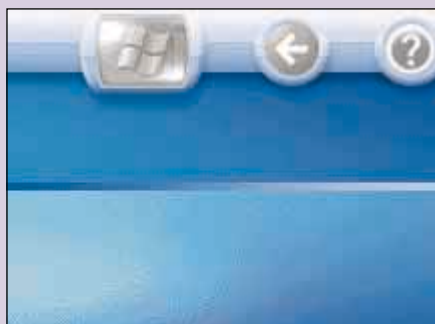
01 Media Center Edition will start installing in exactly the same fashion as Windows XP Professional, so boot from the CD, format the hard drive using the NTFS system and follow the on-screen prompts.



02 Windows XP MCE comes on two CDs and you'll be asked to install disc two at some point. Do so and click OK. Shortly thereafter you'll be asked for the Microsoft Windows XP Professional Service 2 CD.



05 Install all of the updates and then connect the lead from your aerial or sky/cable box to the TV tuner (not the graphics card) line-in. Connect the receiver for the Media Center remote control to a spare USB port. The drivers for it will be installed automatically.



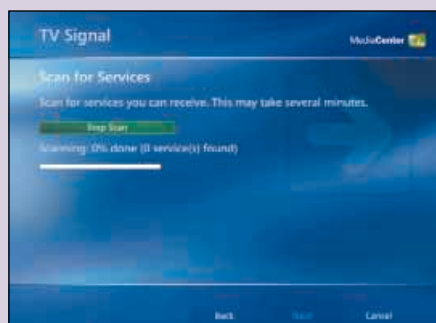
06 Download the latest version of MSN Messenger (Messenger is required by MCE so it's worthwhile having the most up-to-date version) from <http://messenger.msn.co.uk>. Once you've done that, launch the Media Center software from the Start menu.



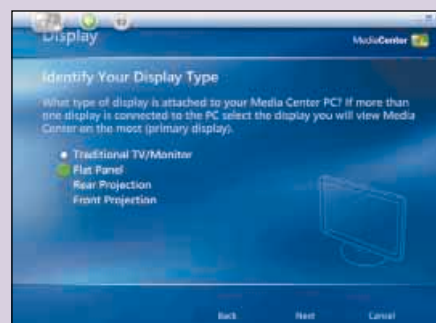
07 A wizard will launch to take you through the process of setting everything up. You can use the remote control at this point rather than the mouse if you wish. You can move the green highlight around the on-screen options using the arrow buttons.



10 Proceed through setting up and downloading the EPG (electronic program guide) and select your TV signal provider, which specifies which transmitter MCE will use. You can check your nearest one at www.bbc.co.uk/reception/tv-transmitters/index.shtml.



11 The relevant EPG information will be downloaded for your region and then you can have MCE scan the airwaves for broadcast services. This can take a while, but you can minimise the wizard, if you want, and carry on using the PC in the meantime.



12 Next you'll configure the Windows display settings for your main monitor/screen. If you're using two screens, configure it for the one you'll use the most. Use the Advanced Display Settings by right-clicking the Windows desktop to set up your second screen.

Taking it further

Internal and external upgrades can take your Media Center PC in several different directions

Considering that Media Center PCs are among the most powerful of all home computers, it's unsurprising that there are all kinds of directions you can take your upgrade in. Perhaps the most obvious is to transplant your hardware into a home-entertainment styled HTPC case. In all likelihood, the PC case that you're currently using doesn't quite have the aesthetic qualities you'd usually look for in a piece of equipment designed for the living room. An HTPC case is the same rough size and shape as the boxes you've already got stacked up under your TV set, such as your VCR, DVD player or cable/satellite box. Your Media Center PC can replace all but one of those – the satellite/cable decoder box. Although there are TV tuner cards available that will accept a viewing card, Sky's digibox includes an exclusive chip that isn't available to the likes of Avermedia and Hauppauge. For the foreseeable future you won't be able to replace everything beneath your TV.

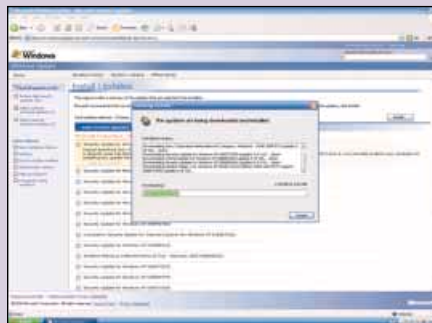
As for internal upgrades, a larger hard drive will undoubtedly be on your shopping list at some point: when you're using your PC as a home stereo as well as a PVR, you'll rapidly eat up the gigabytes. In such an instance you'd be well served by plumping for an SATA drive, particularly if you're upgrading in an HTPC case. These cases are usually designed to rely on passive cooling in order to reduce the reliance on noisy cooling fans. This means that air flow is a core consideration. If you've got to have a fan running, it's far better to have it spinning as slowly (relatively speaking) as possible. The smaller obstruction that an SATA cable presents in this respect is a massive benefit compared to a stifling IDE ribbon cable.

Another upgrade worth considering, if you haven't got one already, is to install a DVD burner. Not only is this useful for turning your home videos into DVDs, but you can also archive recorded TV programmes on to DVDs and free up space on the hard drive. Investing in a DVD burner also means you can get by with a single optical drive in your system, opening up a wider choice of HTPC and small form-factor cases that only have space for one.

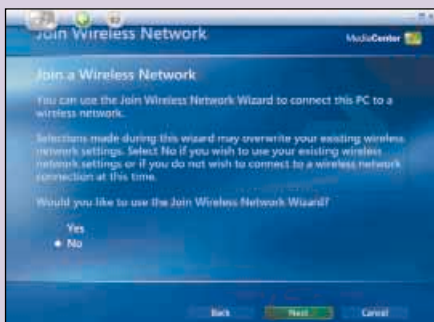
Many of the different directions in which you take your Media Center PC further will be dependant upon what hardware you use. A decent soundcard is an essential whatever you intend to do, but a card with plenty of connection options will be most useful. Creative's Audigy 2 ZS Platinum or Terratec's Aureon 7.1 Universe, which feature 5-inch drive bay modules with various digital and analogue inputs and outputs, will enable you to run everything through your Media Center PC. Connect a good set of speakers, such as Creative's MegaWorks range, and you'll have as good a home entertainment setup as something that would cost you two or three times as much if you'd bought the consumer electronics equivalents. ■



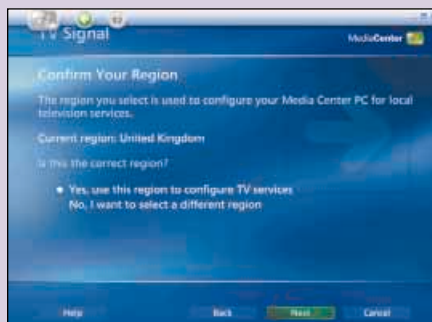
03 When this occurs, insert the first installation CD and click OK. If you're prompted to browse for the IEXPLORE file you'll find it in the I386 folder: select it and click OK. The installation will continue uninterrupted.



04 You'll be deposited at the shiny new Energy Blue desktop and the first thing you'll need to do is install your anti-virus software and then set up Internet access. First, download updates to your AV and firewall and then run Windows Update a few times.



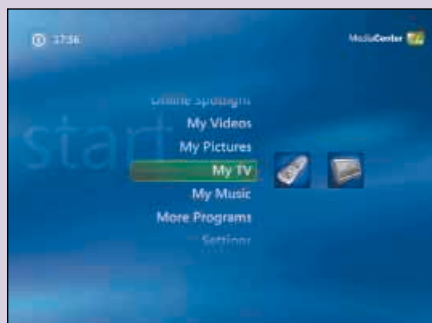
08 You should proceed through the wizard, selecting the option to enable the PC to connect to the Internet automatically. You'll be asked if you would like to set up a wireless network. If you've done this already to download updates then you don't need to do so again.



09 Next you'll be able to configure your TV tuner, display and sound card, so you should proceed through each one in order. Starting with the TV set up, ensure you select the right geographical region as different countries broadcast in different formats.



13 Select the type of connection you're using to connect the PC to your primary screen. If you're using a SCART adaptor to connect to your TV, it'll fall under the Composite/S-Video category. A component connection is best if you've got the hardware.



14 The most complex part is now over, as setting up your audio and speaker system is relatively simple and can be done in just a few seconds. Once configured, you can access all of the Media Center programs and features by pressing the green Media Center button on the remote.

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AMD Athlon 64 4000+
One of the fastest processors in the world. Future-proof - ready for the next generation 64-bit software



Musketeer PC Monitoring system: Take control of your system with the Musketeer PC monitoring system. (only on Power model)

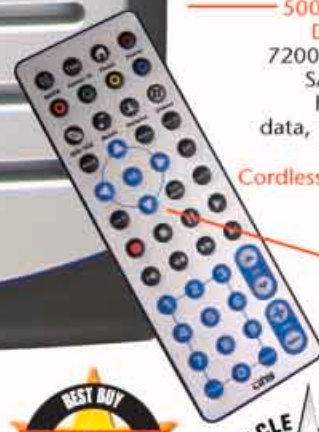
1024MB (1 Gigabyte) of high speed Micron DDR400 (PC3200) RAM increases system performance allowing multiple applications to run at the same time.

500GB SERIAL ATA HARD DISK

500GB Serial ATA Western Digital hard disk space, 7200RPM utilising ultra fast SATA interface. Provides huge storage space for data, photos and other files.

Cordless Multimedia keyboard and mouse included on Power model

Remote Control



TYNB4AMD
(PCAN/003)

HOW TO UPGRADE YOUR...

Power supplies

Want a new CPU? Video card? Hard drive? Don't spend anything until you've worked out whether your power supply can handle it. Mike Williams adds up the watts

It's the forgotten upgrade. The glamour-free, unexciting option that most people never consider. Who really wants to upgrade their power supply, anyway? 'What's the point?' you might ask.

Well, although power supplies have a rated maximum wattage that they'll supply, the amount your system takes can vary considerably. Fans

it could begin to hit the watts wall at apparently random times later on, causing you trouble. The result might be intermittent problems with USB or FireWire devices, for example. Alternatively, Windows and applications could start behaving erratically, or blue-screen errors and spontaneous reboots might start happening.

A GOOD WAY TO START THINKING ABOUT POWER SUPPLIES IS BY MAKING AN INVENTORY OF YOUR NEEDS

might only start running when the temperature gets high, for instance. Bus-powered USB or FireWire devices will grab power whenever you plug them in (and sometimes even if you think they're switched off). Furthermore, devices such as DVD writers may draw minimal power when they're idle, but increase the amount considerably when you're using them properly.

If your system is already close to its power supply limit, then it might boot up and appear normal, but then

If you replace your power supply with a higher rated model then all these instabilities should disappear, but how much power do you actually need? That requires a little thought and it's not the only factor to consider.

What to look for

A good way to start thinking about power supplies is through making an inventory of your PC's current requirements (see the table on the opposite page for examples). You need to think about this when upgrading,

too. Replacing integrated graphics with a top-of-the-range GeForce card, for instance, could mean an extra 100W on the PC's power needs. If your system only has a cheap 250W supply then it's probably not going to cope.

If it's time for a new power supply, then you should take a look at the connectors that it includes. It'll need to have an ATX-12V connector, for instance, and either a 20- or 24-pin ATX power connector, depending on what your motherboard requires. There are also adaptor cables that you can buy to use a 20-pin power supply on a 24-pin board, but it's really not recommended.

You'll also want plenty of conventional power connectors (ten is a good figure). Having Serial ATA connectors will avoid the need to use adaptors, while dual PCI Express 6-pin connectors will enable you to use the

latest in graphics cards. There's then the maximum wattage output to consider (give yourself a reasonable safety margin), and check efficiency, too. Supplies with active power factor correction (Active PFC) are particularly efficient, quieter, and should last longer than the competition.

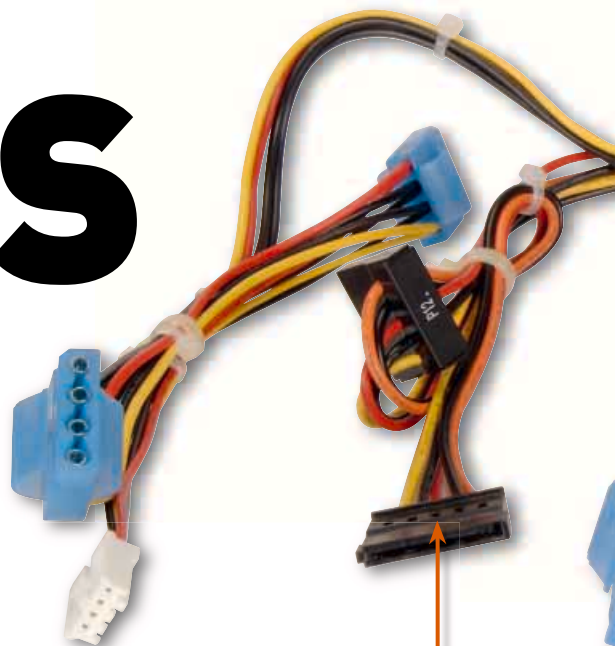
Installation

Before starting the upgrade, clear plenty of space around your PC, unplug it from the mains and attach an anti-static wrist strap if you have one. Open the case and start disconnecting the power supply from your drives and motherboard. There will be plenty of cables and you're going to have to reconnect everything later, so make some notes if they'll help you remember.

Now you detach your power supply from the case, usually by

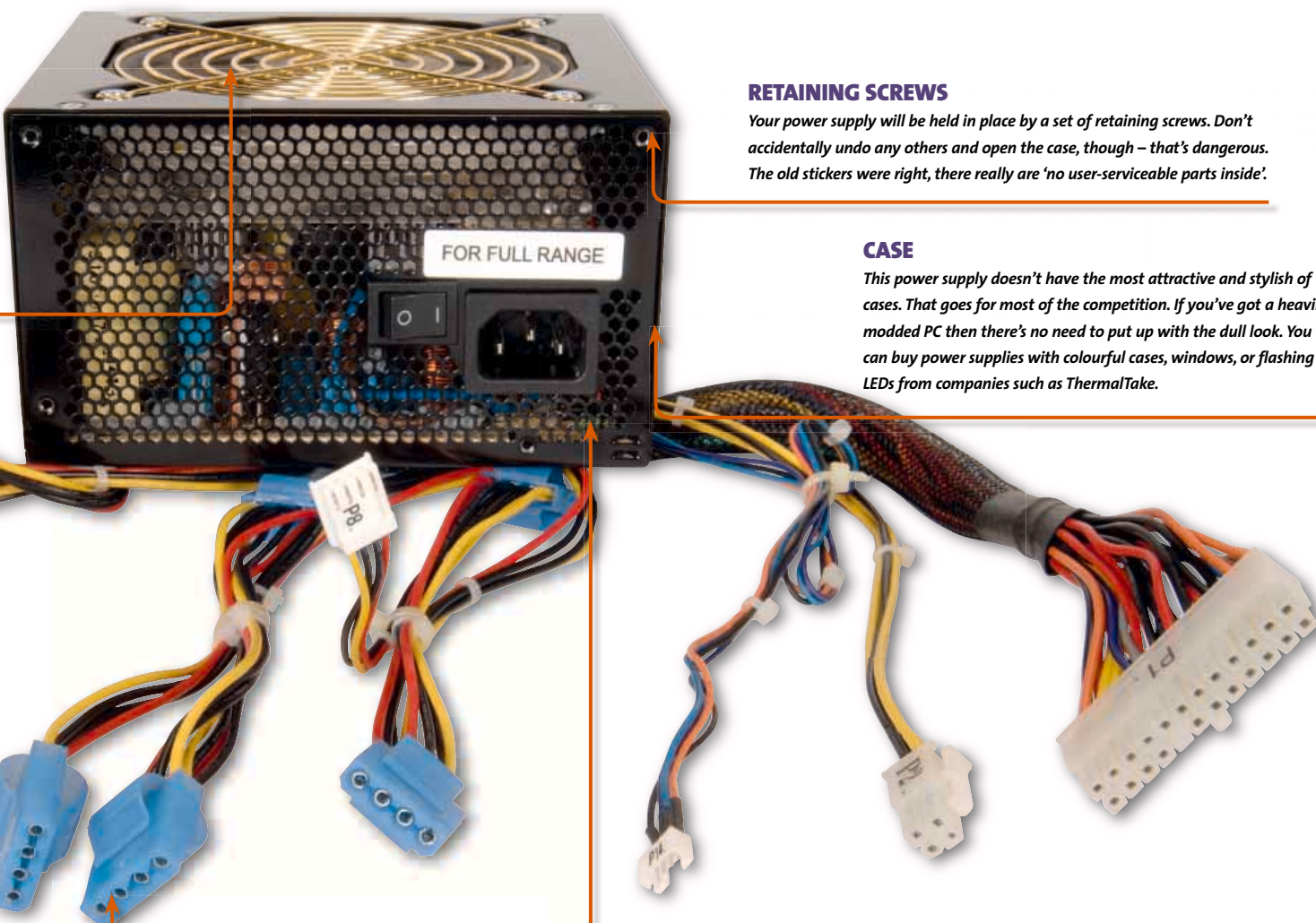
FAN

More watts mean more heat, so when you're buying a high-rated supply it's important to consider cooling. One 80mm fan is an absolute minimum, a 120mm fan is better, while two fans could be even more effective. Look for 'air delivery' in the small print to see how effective a fan might be (higher figures are better).



SATA POWER

As SATA becomes more popular you'll need to make sure that your PSU has some SATA power cables, too.



RETAINING SCREWS

Your power supply will be held in place by a set of retaining screws. Don't accidentally undo any others and open the case, though – that's dangerous. The old stickers were right, there really are 'no user-serviceable parts inside'.

CASE

This power supply doesn't have the most attractive and stylish of cases. That goes for most of the competition. If you've got a heavily modded PC then there's no need to put up with the dull look. You can buy power supplies with colourful cases, windows, or flashing LEDs from companies such as ThermalTake.

MOLEX CABLES

Make sure when you buy your power supply that it has enough Molex power leads for all your peripherals.

VENTILATION HOLES

To help the fans out (and keep the noise down) your power supply will probably have ventilation holes for quicker heat dissipation.

undoing some screws at the back. Be sure that it's supported as you do this, because a heavy power supply falling on your motherboard will do some serious damage. Lift the old power supply out and take a moment to compare it with the new one. You have shopped wisely and chosen something with matching connectors, right? Then screw it into place and connect the new supply to your motherboard and drives.

And finally...

Check your work carefully, making sure there are no stray leads. (A mess of cables will obstruct air flow, and worse still, an unplugged fan could fry your CPU). Leave the case off for a moment, plug your PC in and make sure it boots as normal. Once that's confirmed, put the case back on and you're finished. ■

→POWER WATTAGE CALCULATOR

How much power does your PC currently require?



CPU

Intel Pentium 4
64 to 103W

AMD Athlon XP
Thoroughbred
1600+ - 2700+
68 to 77W

AMD Athlon 64
89W



VIDEO CARD

32MB generic
graphics card
25W

ATI Radeon
9700/9800
54W

ATI Radeon
9800XT / X800
68 to 93W

nVidia GeForce
5800/5900
80 to 85W

nVidia GeForce
6800
105 to 110W



RAM

PC100 SDRAM
7W per module

PC133 SDRAM
12W per module

DDR SDRAM
10W per module



DRIVES

Hard drive
25W

CD-ROM
20W

CD-RW
25W

DVD-ROM
25W

DVD-RW
25W



EXPANSION

Basic PCI card
(network, modem)
4W

Basic PCI sound
card
7W

PCI SCSI Controller
card
25W

Bus-powered USB
device
4W

Bus-powered
FireWire device
8W



SYSTEM

System fan
2W

Illuminated
system fan
3W

Cold cathode tube
light
3W

→ WHO ARE YOU?



UP CLOSE & PERSONAL

NAME: Bill Owen**OCCUPATION:** Pro modder.**AMBIITION:** Manufacture my own line of case mod products.

SYSTEM SPECS: Intel's MB D875PBZLk, P4 2.8GHz cooled by Swiftech's mcx478-v with 92mm Panaflo fan, 1GB of Kingston HyperX 3200 DDR 400 memory, ATI Radeon 9800 Pro, Sound Blaster Audigy 2, Logitech 5.1 speakers, 80GB Western Digital Caviar hard drive as master drive and 200GB Seagate Barracuda as slave, TDK DVD-RW, Lite-On DVD-CD-RW.

ON THE WEB: Check out Bill's amazing PC mods at www.mnpctech.com. As well as The Wall, you can check out his other great project logs, such as the work-in-progress Harley Davidson 100th anniversary PC.



Wonder wall

It's time to see how the professionals do it. **Graham Barlow** meets **Bill Owen** and discovers his PC is anything but another brick in the wall

This month we decided it was time to show you what the experts get up to. Bill Owen is a professional PC modder from Minneapolis who runs www.mnpctech.com. He takes requests for mods from PC hobbyists to gamers who want something extra special to take to their next LAN party.

The mod we're featuring from Bill this issue is called The Wall PC. Inspired by the Pink Floyd concept album and movie, *The Wall*, it's a stunning piece of work. The red and black hammers from the movie feature prominently in the mod. There's even a real hammer welded to a mounting plate on the top of the case that can be used as a handle. The PC features other artwork from *The Wall*, including lyrics from the album on the case and a model face over the air intake. The dials on the front are for a 17watt Fanbus, so that the four fans inside the PC can be controlled individually.

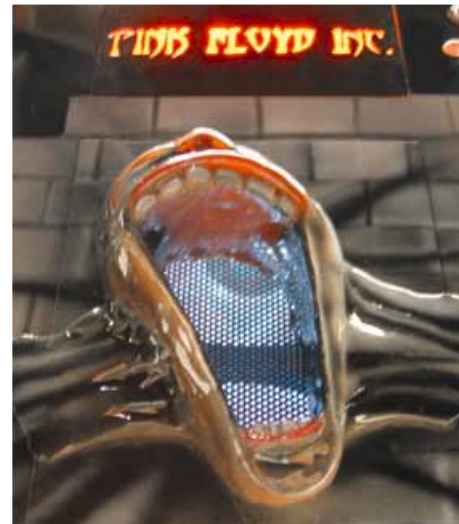
Bill's favourite part of the mod is the air intake that resembles Gerald Scarfe's classic *Face in the Wall* drawing. It's made from Super Sculpey, a polymer clay that's chip resistant and shatter proof after baking. It's excellent for prototypes requiring a hard finish and fine detail. Bill's idea to

mould the face in the wall image over the intake grill (roughly 3.5 x 5 inches) was ingenious, because the open mouth acts as a cool air intake. A large air gap already existed beneath the bezel so a smaller front intake isn't detrimental to airflow.

Down to the details

Polymer clays must be conditioned first. You need to knead and work the clay with your hands for some time. Conditioning the clay softens it and makes it stronger once it's baked. He also bought a set of wooden sculpting tools to add facial details. In order to attach the moulded face to the case, Bill fabricated a steel plate with a ventilation hole to cover Kingwin's mesh grill. He then epoxied the face onto the plate, which enabled its mouth to become the air intake. As a finishing touch, Bill illuminated the mouth inside with two 80mm white LED fans.

The face was challenging, but the most difficult piece of the mod for Bill to accomplish was the window in the side of the PC, which required water jet cutting. It was hard work, but eventually the mod was finished. 'After gluing all of the pieces with Devcon's Weldit all-purpose adhesive, I stood back in amazement,' remembers Bill.



Of course, when you're designing a PC for a client, it's their reaction that matters most, not how good you think it is. Luckily, Bill's client was more than satisfied. 'He called me when the delivery arrived. He cried out "Oh my God, wow!" It made all the long hours worth it to hear his reaction over the phone.'

We had the same reaction when we saw it – it's an amazing mod. If you'd like a special PC made for you then drop Bill Owen a line at www.mnpctech.com. We're sure you won't be disappointed. ■

It's hammer time

Bill really hit the nail on the head with this mod



From this...





Every angle provides a new stunning view of the effects Bill has created in this memorable Pink Floyd-inspired PC mod. But would you rather see the Dark Side of the Moon...?



An ordinary PC becomes extraordinary in an expert's hands. We weren't sitting on the fence – or The Wall – with this one. It's great!

...to this!



KILL ALL SPYWARE

Another day, another piece of malicious software prepares to hijack your PC. Joe Cassels provides the key to comprehensive protection

Microsoft's high-profile campaign to help users protect their PCs from viruses help to raise the profile of malware last year, culminating in the release of Service Pack 2 for Windows XP. However, because it was prompted by a number of highly contagious worms with global spread, the focus was still on the potential problems of viruses. Other forms of malware are less well known, but in some ways they can be more dangerous.

If your computer contracts a virus that prevents it from booting or causes it to grind to a halt, you

your knowledge. It makes the broken computer delivered by the unsophisticated virus seem like a mere inconvenience.

There's a range of unpleasant malware out there that can literally place your PC and its data into someone else's hands. Even if this possibility doesn't concern you, the more immediate effects of spyware, Trojans and diallers probably will. These can cause erratic behaviour from your computer or slow down its performance considerably. In the case of diallers, the first you may know about them is



THERE'S A RANGE OF UNPLEASANT MALWARE OUT THERE THAT CAN LITERALLY PLACE YOUR PC AND ITS DATA INTO SOMEONE ELSE'S HANDS

generally know about it because you're prevented from using your PC. This is inconvenient, but at least it demands action. If your phone line was cut off, you'd take steps to get it reconnected if you could. However, if your telephone was surreptitiously tapped and other people could listen in and record your conversations, you'd know nothing about it. If your PC is infected with spyware, the result is similar. An unknown party can gather information about you and possibly gain access to your data without

when an impossibly high phone bill arrives on your doormat.

This feature aims to uncover the dangers of malware, inform you about what can infect your computer and show you how to tackle the problem. We'll take you through the most common kinds of malware before demonstrating its impact on both a local and global level. If you have been infected, we'll provide some pointers on how to clean your system – and better still, advise you on how to keep it that way.





Everything you need to know...

We define malware

An introduction to the various forms of malware – Trojans, viruses, spyware *et al.* We also point you in the direction of Symantec's online A-Z database of all known malware.

Pages 70 and 71

Assessing the risks

Spyware and adware are often overshadowed by the threat of viruses. Yet their effects can still spell disaster for your PC, as we prove when we install the peer-to-peer program *Grokster*.

Pages 72 and 73

Undo the damage

There's no need to panic if you suspect that your system has become compromised by malware. We describe the programs that can get you out of trouble.

Pages 74 and 75

Stay safe and secure

Now that you've ensured your hard drive is free from malware, how do you stay safe? We give you all the advice you need, including scheduling AV checks and browser usage.

Page 76



Malware takes many forms

You've heard of viruses, but these aren't the only nasties floating about that are just itching to wreck havoc within your system

Most people are familiar with the concept of a computer virus: the self-replicating piece of code that hides inside another program or document so that you unwittingly pass it on to other machines, thus spreading the infection. However, viruses are only one kind of malware, which is the term used to describe any potentially harmful software. There's a whole host of others queuing up to cause their own particular brand of trouble.

install, but once you run it the unpleasant contents are revealed, although not always immediately.

You're way ahead of most of the population if you know about these types of software. As a **PCAnswers** reader, you're probably also familiar with spyware and adware: programs that exist to promote other services either with or without your permission and that may collect marketing information about you. We often advise running anti-spyware software as the problem is on the

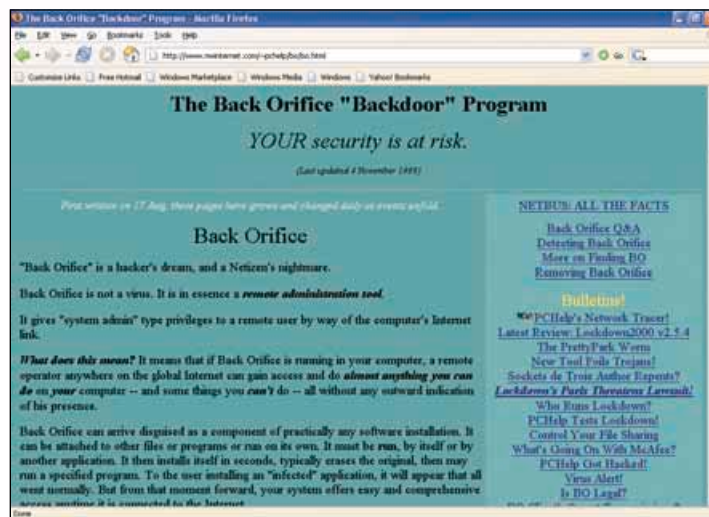
THE DIALLER ATTACKS YOUR BANK ACCOUNT BY CAUSING YOUR MODEM TO CALL PREMIUM RATE PHONE NUMBERS

You may well have come across a worm, which is often mistakenly called a virus and works in a similar way, except that it doesn't need to piggyback on any other file for transmission, as it can infect other computers effectively by itself. The Trojan may also be familiar to you. It's a program that at first appears innocuous and even useful or fun to

increase. However, there are still other kinds of malware that can affect you or your pocket.

Dial S for scam

The dialler attacks your bank account by causing your modem to call premium rate phone numbers without your knowledge. Broadband subscribers who don't have a dial-up



One of the most notorious backdoor applications is Back Orifice. Find out more about it at www.nwinternet.com/~pchelp/bo/bo.html

modem installed are safe from this unpleasant scam, but that's little consolation if you've just had to fork out a fortune.

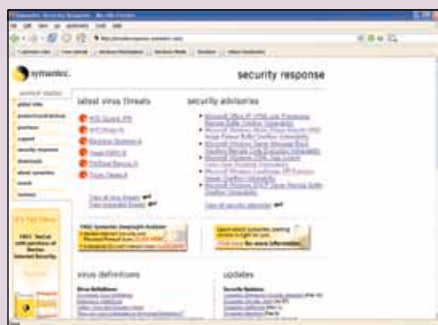
If your browser becomes hijacked you may not be able to move away from the Web sites that the attacker wants you to see, while exploits and backdoors could give hackers direct access to your computer – again

without you knowing a thing. The first step in protecting yourself against these threats is knowing what they are, which is why we've prepared a table (opposite) demonstrating the most common malware problems. We've also shown you how to research specific threats using Symantec's Security Response Web site.

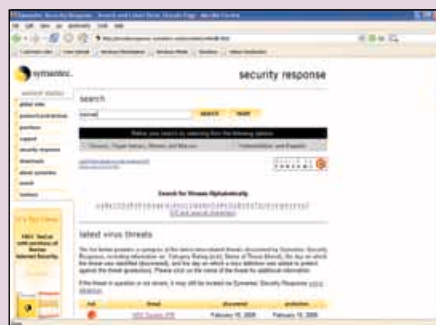
→ STEP-BY-STEP GUIDE

Gain access to Symantec's reference library

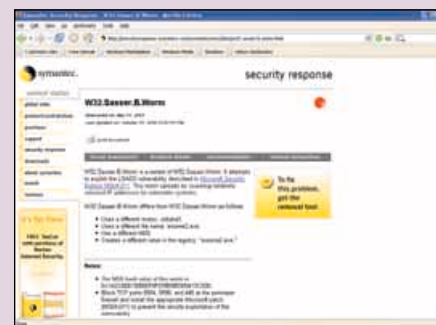
There are various databases of known malware online, but Symantec's is the best known



01 Browse to www.symantec.com and follow the link to Security Response. This provides up-to-date advice on the latest viruses, Trojans, worms and spyware. Click 'View all virus threats'.



02 This provides an alphabetical list of all known viruses and vulnerabilities. Either browse these by letter or enter a keyword to search by. Click Search to turn up listed malware matching your terms.



03 You're provided with a list of matching entries. Follow one to see detailed information on it. In this case it's a worm and there's a link to the Microsoft knowledge base article that documents the vulnerability that it exploits.

→ FURTHER INFORMATION

THE SUSPECT LIST

Meet the most common malware candidates

Beneath the rock that we call malware there lies a wriggling, squirming mass of specialised software programs that are designed to infiltrate your system and cause trouble in their own insidious manner. Some of them, like Trojans and worms, will be familiar, yet there's a good chance that others will be new to you. As the old quotation goes, 'Know thy enemy...'

Worm

HOW IT WORKS

Worms are similar to viruses, but they're self-contained and don't need to insert themselves into other programs or files. They use email or other file transmitting capabilities of PCs to disperse themselves.

NOTABLE EXAMPLE

MyDoom, first detected at the end of January 2004, spread rapidly and caused a global Internet slowdown.

Wabbit

HOW IT WORKS

Wabbits are self-contained like worms, but they don't replicate via networks. Instead they multiply repeatedly on the local computer, seriously affecting its performance, although they may have other ill effects built in, too.

NOTABLE EXAMPLE

Cookie Monster, named after its Sesame Street inspiration, locked up terminals, causing them to repeatedly demand cookies.

Trojan horse

HOW IT WORKS

A Trojan is a malicious program disguised as legitimate software. It's named after the legendary tactic used by the Greeks in the war of Troy. It often renders your defences useless or opens a backdoor for an attacker.

NOTABLE EXAMPLE

Fraggle Rock emerged in Britain in 2001. It logged keystrokes, stole passwords and provided remote access to infected PCs.

Backdoor

HOW IT WORKS

A backdoor may be installed on your system via a Trojan or worm. It may also have been planted in an otherwise legitimate application. It provides a way to access your system, usually remotely, while avoiding normal authentication procedures.

NOTABLE EXAMPLE

The SoBig worm installed a backdoor that enabled infected computers to be used as spam relays.

Adware

HOW IT WORKS

This describes software supported by advertising. In its most benign form, adware displays adverts within a program. However, more intrusive advertising might trigger pop-ups or even gather marketing data. This crosses over with the next category: spyware.

NOTABLE EXAMPLE

WinAd emerged in 2004. Among other behaviour, it triggered numerous pop-up adverts in Internet Explorer.

Spyware

HOW IT WORKS

Spyware is software that collects data on the PC user without his or her knowledge or consent. This may include logging the Web sites visited or even caching credit card numbers in severe cases.

NOTABLE EXAMPLE

Gator produces pop-ups and partially disables firewalls. Its manufacturer, the Claria Corporation denies that the application is spyware.

Exploit

HOW IT WORKS

An exploit is a piece of software designed to take advantage of a bug or flaw in another program, providing access to the host PC or the ability to damage it.

NOTABLE EXAMPLE

Exploits tend to be known by the vulnerability that they use, like the recent OLE and COM vulnerability patched by Microsoft in February 2005.

Root kit

HOW IT WORKS

This is a set of tools installed remotely on a system once it has been hacked. Named after the UNIX/Linux root account, root kits exist for most OSes and may differ depending on the method used to crack your PC.

NOTABLE EXAMPLE

Specific examples are hard to point to, but rootkits can either give access to the OS kernel or to applications running remotely.

Dialler

HOW IT WORKS

A dialler is designed to use your modem to make an unauthorised phone call, usually to a premium rate number. The victim's PC runs up a big phone bill and the scammer collects the profits.

NOTABLE EXAMPLE

Mejorbus used the possibility of accessing porn Web cams as an enticement to download. It hijacked the browser and dialled the premium rate number at startup.

Browser hijack

HOW IT WORKS

Software designed to hijack your browser may be executed via a Trojan or a worm. It resets your browser home and search pages to ones favouring the site of origin. Undoing this is tricky.

NOTABLE EXAMPLE

Fastwebfinder resets the homepage to www.fastwebfinder.com. It also modified the Search bar, search page and favourites of Internet Explorer.

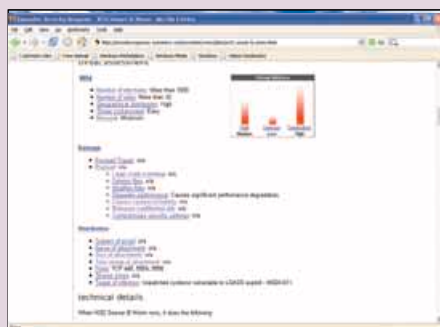
Virus

HOW IT WORKS

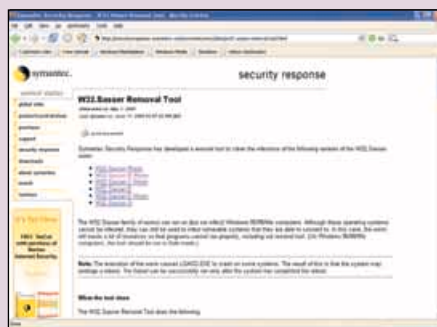
A virus is a program that can replicate itself. It spreads by inserting copies of itself into other programs or documents, in a similar manner to the way living viruses insert themselves into body cells.

NOTABLE EXAMPLE

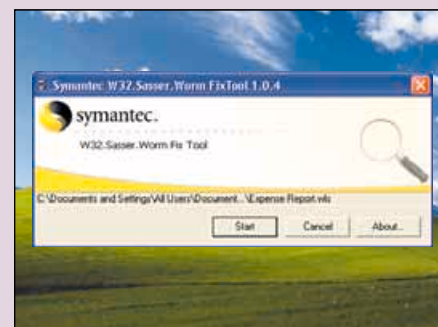
Elk Cloner, thought to be the first computer virus, replicated itself via floppy disks.



04 Scroll down to see distribution information and technical information on the evidence that this particular threat leaves on your system. You can use this to confirm an infection if your own scanning software doesn't detect it.



05 In the case of highly infectious malware such as worms, Symantec often provides a free removal tool. Follow the link to the tool and carefully read the instructions. Print them out if necessary.

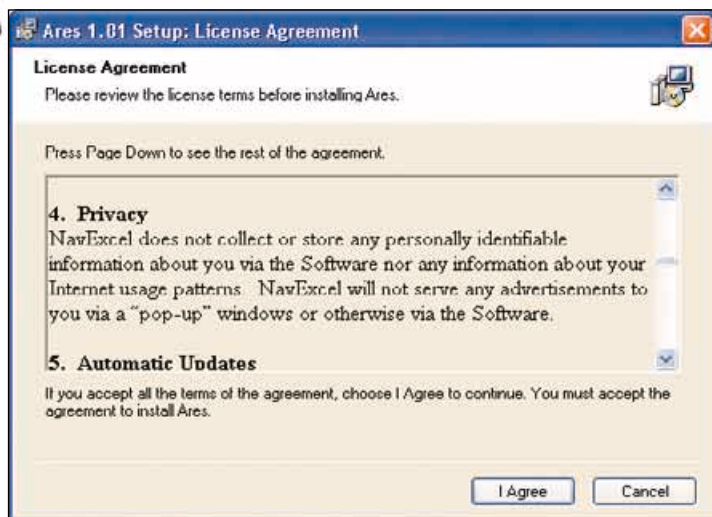


06 If you need to use the removal tool, download it to a safe place and then follow the execution instructions. These normally involve disabling system restore to prevent it from restoring the virus at a later date. Follow them to the letter.



Just how bad is malware?

Should you be concerned if you install an application that admits to including Adware? It's like asking if Bill Gates has a bob or two...



Check the licence when you install software. This one claims not to invade your privacy; while others do the opposite

Most people are well versed in the problems caused by computer viruses. Because adware and spyware are thought of as less of a problem, they can often be overlooked. Here, we'll demonstrate the seriousness of the problem.

When you install a new piece of software you may well glance at the end user licence agreement, possibly even scrolling through it before clicking I Accept in order to continue. Unless you have limitless time, it's understandable that you don't want to waste minutes wading through some legalese. However, bear in mind that by accepting the agreement, you're agreeing to all its terms. These may include accepting the installation of spyware.

We've come to accept lengthy licence agreements as just another necessary evil. It's also easy to dismiss them, thinking that each agreement is the same as any other. However, they can and do differ, sometimes considerably. Some end user licence agreements are very lengthy. Is it reasonable to expect a busy person to have the time to read and consider the terms of everything he or she installs? Whatever you think the answer to this question should be, the first clue that you might get that a program contains spyware is likely to be found in the licence agreement. Look for clauses that mention advertising, promotions and privacy.

Clever use of licence agreements can mean that spyware can operate

→ AT A GLANCE

Here's what Ad-Aware found

Take a closer look at the Grokster scan results

GROKSTER SETUP

This is the Grokster setup EXE file that we downloaded from the Grokster Web site. The initial download was just 251KB.

DESKTOP SHORTCUTS

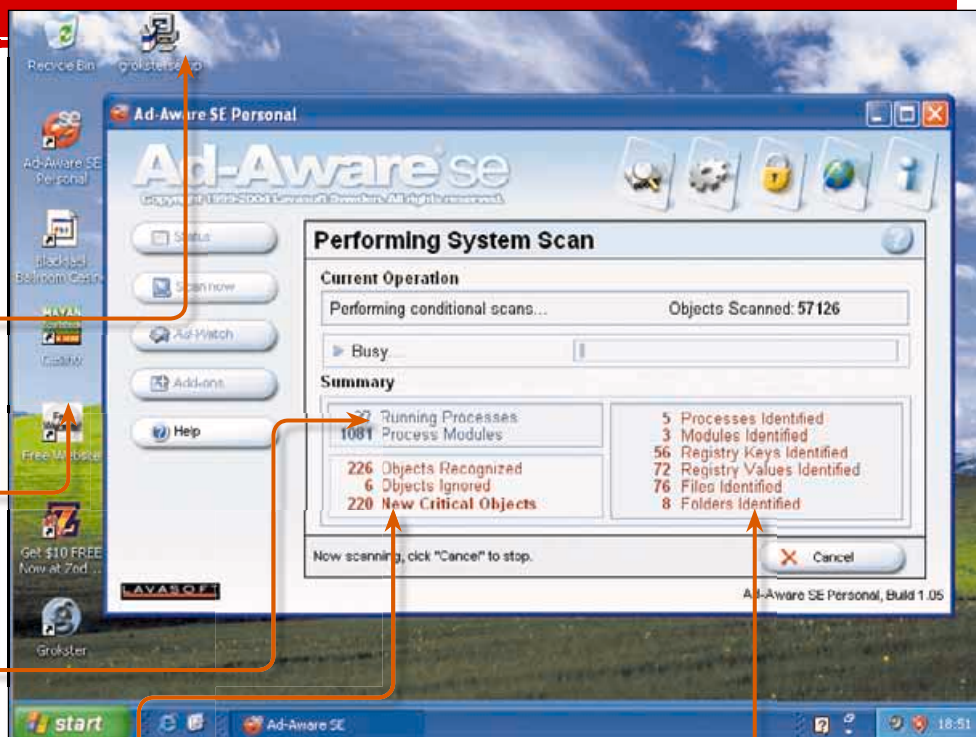
These additional shortcuts were added to the desktop automatically when Grokster installed. It doesn't make a secret of being adware in its user agreement, though.

RUNNING PROCESSES

This shows the total number of running processes on this machine. Bear in mind that it just has Windows, Ad-Aware and Grokster installed.

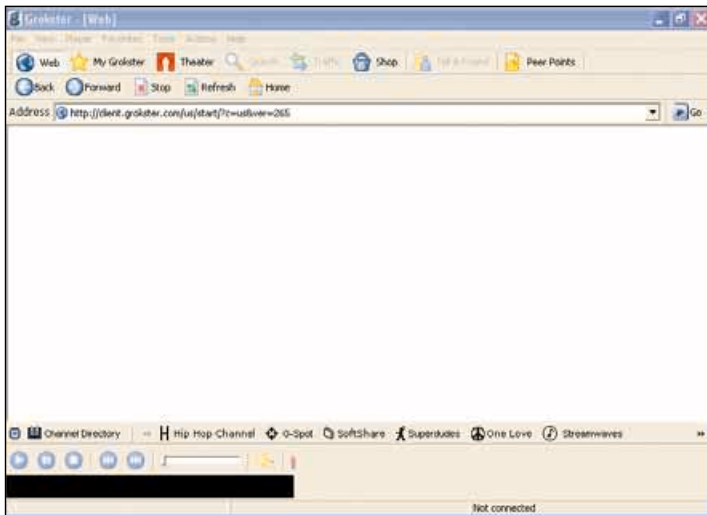
RECOGNISED OBJECTS

This displays the total adware objects recognised before the scan locked up. Note that six were not deemed critical.

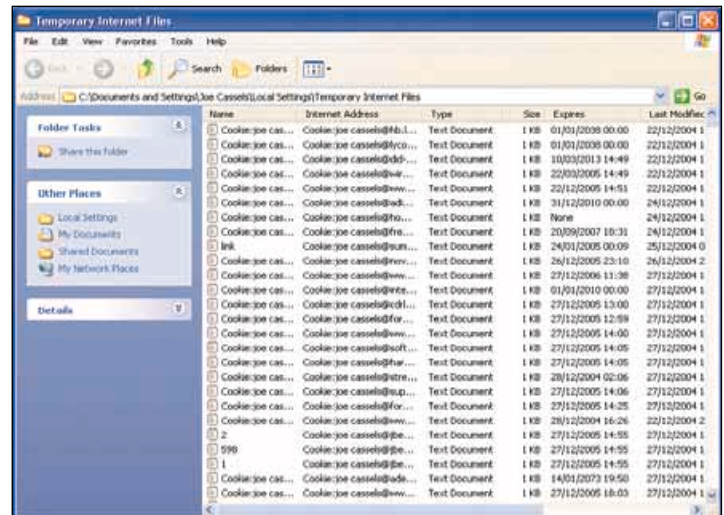


RESULTS WINDOW

According to Ad-Aware the following was found. Five processes and three process modules are recognised as spyware. Fifty-six Registry keys and 72 value entries that weren't present before Grokster was installed are flagged as relating to spyware. Seventy-six files on this PC are now identified by Ad-Aware – these may be relatively innocuous tracking cookies, but EXE files would be bad news. Eight folders now relate to spyware and these might contain some of the files above, or could be used to collect files containing logged data.



Grokster added several additional toolbars to Internet Explorer and managed to significantly affect our test PC's performance



These text files in the Internet Explorer cache are cookies. Most are completely harmless, but some may contain tracking information

legally, apparently with your permission. The argument as to whether this is moral or whether it should be legal is set to run for some time yet. In the meantime, it's up to the individual to be aware of the potential dangers and to take steps to prevent them. While most people know that it's a good idea to run an up-to-date virus checker, the message about spyware has yet to penetrate the mass market. Few people are aware that any PC connected to the Net is vulnerable and most users are content to put up with the dip in performance that spyware inevitably brings to their computers, unaware that this lag may indicate that information about their browsing

habits and other personal data is being transmitted as they work.

Signs of infection

The problem of spyware is widespread. Most support technicians scan PCs for malware when they receive a faulty machine. It's a rare occurrence for a computer not to show signs of infection. The majority of problem files tend to be tracking cookies, which are small text files stored by your browser when you visit particular Web sites. These were designed to help membership-based sites remember your details to save your having to provide authentication on every visit. However, they can be misused to log your browsing habits

and report back the pages that you've visited between visits.

Compared to some spyware, this is fairly harmless; if you regularly remove the cookies or tighten up your browser settings you can reduce their effects or eliminate them altogether. However, spyware that makes changes to the Registry or installs executable files and running processes is a different matter. These programs can reduce performance by tying up processing time and RAM. If they report back via the Internet, they will provide a drag on your connection. If you're on dial up, this could seriously affect your browsing speed.

To get some idea of the potential effects of spyware applications, we

installed *Grokster*, the peer-to-peer program on a PC with a fresh installation of Windows XP. The walkthrough below provides details of the experiment and the annotation shows what additional software was installed in the program's wake. To be fair to *Grokster*, it makes it perfectly clear in its user agreement that the program is adware and that you may notice changes to your browser and desktop. The scale of these changes, however, was nothing short of staggering. Performance dipped noticeably and our *Ad-Aware* scans revealed hundreds of pieces of spyware. Not bad work for a single installation that took a little under ten minutes to complete.

→ STEP-BY-STEP GUIDE

Not recommended

We deliberately infect a PC with spyware. Don't try this at home – we mean it!



01 On to a PC with a fresh installation of Windows XP SP2, we installed a new copy of *Ad-Aware SE Personal Edition*. After updating its signature files, we ran a full system scan. It came up with no suspicious objects detected.



02 Browsing to www.grokster.com, we downloaded the free version of this peer-to-peer program to the desktop. We then launched the setup program, which downloaded some new components. Note the increase in desktop icons.



03 The PC became very sluggish. We didn't log in to *Grokster* or register for an account. Several pop-up windows appeared. *Ad-Aware* found 220 critical objects, including several from each object type before the scan halted, unable to proceed.



Removing malware

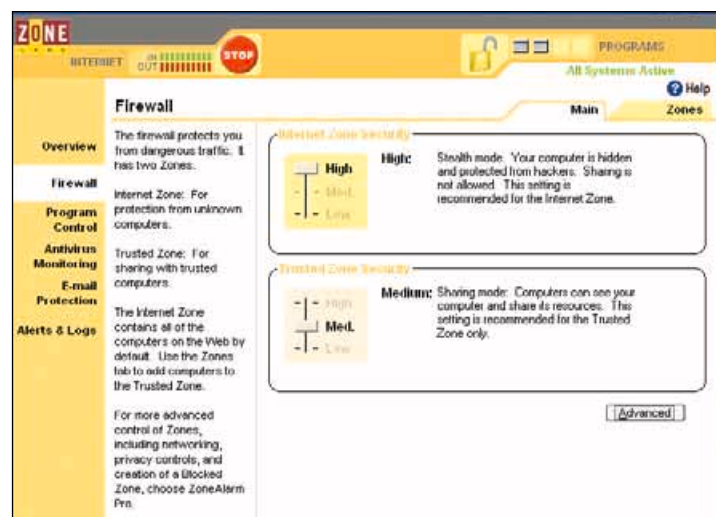
Now you know the devastating impact that malware can have, here's how you can get rid of it without breaking into a sweat

To remove malware, you need to know what has infected your PC and how to delete it. Thankfully, in most cases you can do this automatically if you use the right software. Anti-virus vendors are beginning to show an interest in eradicating threats other than plain old viruses and worms, so it may be worth investing in a one-size-fits-all application. However, make sure that all your bases are covered if you decide to do this. Does the program detect and remove Trojans, spyware, adware and can it undo a browser hijack? What's the quality of its continuous protection? If you're in any doubt, consider using individual tools. You can find free tools that will help you remove all these threats.

If you believe that you're infected with a worm that your anti-virus hasn't picked up, you'll need to do some research. As we described a couple of pages back, Symantec's Security Response site is great for this and it even offers removal tools.

Assuming that you have an up-to-date antivirus, you should schedule daily scans. In most cases this will cover you for viruses and worms.

ANTI-VIRUS VENDORS ARE SHOWING AN INTEREST IN ERADICATING THREATS OTHER THAN VIRUSES AND WORMS



Install a third-party firewall like ZoneAlarm to receive notification if any unauthorised software tries to use the Internet



Set up a daily spyware scan to coincide with a time when your PC is usually idle

Trojans aren't covered by all anti-viruses. Consider using *Trojan Remover*, which you can find at www.simplesup.com/tremover/details.html. We provide a Five-minute guide to its operation on page 116. An alternative to consider is *SwatIt* (www.swatit.org), although it isn't updated as frequently as *Trojan Remover*.

For spyware there are several choices. We cover spyware-removing

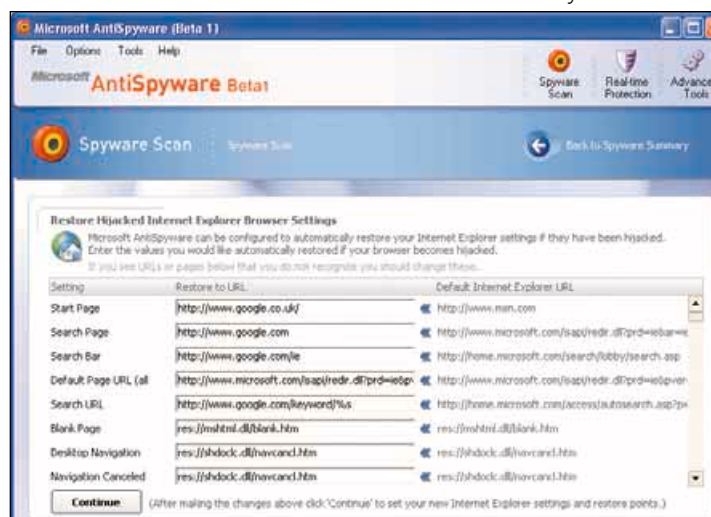
software in this month's software group test, so refer to that when making your choice of application. Microsoft's *AntiSpyware* is a strong contender, although at the time of writing there was a Trojan that targeted it. By the time you read this, though, it's likely that the application will be safely patched. See the walkthrough for details on using it.

Spyware awareness

Ad-Aware SE Personal Edition is another free anti-spyware offering, which we have used here to investigate the effects to Grokster. To download it, browse to www.lavasoft.nu. Once

installed, launch the program and click 'Check for updates now'. Click Connect to contact the Lavasoft server. If there are updates to be downloaded, you'll be notified. Click OK to agree to download and install the update file. Wait as the new spyware signatures are downloaded. Once the update is complete, you'll return to the initial screen. Click Start to begin a scan. You can now choose the type of scan you want. Select 'Perform full system scan' if this is your first scan, otherwise opt for a smart system scan. Click Next. If critical spyware objects are found, you'll hear a sound and see a brief report. Right-click an object and choose 'Select all objects'. Click Next to quarantine all spyware.

Spybot-S&D (www.safer-networking.org) is also well regarded in the fight against spyware. While free, donations are encouraged. Once you've installed and updated the program, choose Search and Destroy and click 'Check for problems' to initiate a full system scan. This will examine your PC. Threats found will be displayed in a list. Items selected with a tick are those slated for removal. Click 'Fix selected problems'. Choose Immunize to find potential vulnerabilities in your system. Fix these by clicking the Immunize button marked with a green cross. This blocks known unsafe add-ons to *Internet Explorer* from being installed automatically.



If you enter your browser setting into Microsoft AntiSpyware, it can detect changes and hijacking attempts

If you want to be alerted by suspicious Internet activity on you PC, consider a third-party firewall such as *ZoneAlarm* (www.zonelabs.com). This'll inform you any time a new program asks for Internet access, which is a useful way to find out if an unknown program is trying to send or receive data without your permission.

Browser hijackings are notoriously difficult to undo. Many anti-spyware programs, including the three mentioned here, provide the means to prevent browser hijacks, but removing one that's already in place can be tricky. See the boxout for some help with this.

It's worth checking if malware has opened up any of your PC's defences. You can do this at Shields Up!. Browse to www.grc.com and follow the links to Shields Up! Agree to having your PC probed by the site. Follow the various tests to find out how secure your PC is.

→ FURTHER INFORMATION

UNDO A HIJACK

If your browser has started to behave erratically, you may need to take action

Resetting a hijacked browser can be as simple as visiting Internet Options and putting the homepage back to where it was. However, more often than not, it's not that simple.

Try rolling back your system using System Restore. If this doesn't work, launch and update *Ad-Aware* to include the latest spyware and run a full system scan. Remove all items located. If there's still no joy, download and run *HijackThis* (<http://mjcl.com/mirror/hjt/>). It runs a scan of the most commonly changed browser items and enables you to delete those you didn't make yourself. Use the list of known Browser Helper Objects at <http://sysinfo.org/bhoinfo.php> to help you decide what to delete. Check any

configurations that you didn't make or save the log and ask an expert which items to remove.

Launch Regedit using Start, Run, typing regedit and clicking OK. Take the usual Registry backup precautions. Browse to HKEY_CURRENT_USER\Control Panel\don't load. If there is an entry called inetcpl.cpl select and delete it. Use Search to find all files with the extensions HAD and JS. Use a wildcard search for *.hda and *.js. Open the returned results in Notepad and look for any URLs mentioned. If these relate to the hijack sites, delete them. Launch MSConfig and Check the entries on the Startup tab against those listed on www.sysinfo.org/startuplist.php. Remove any listed items and restart your PC.

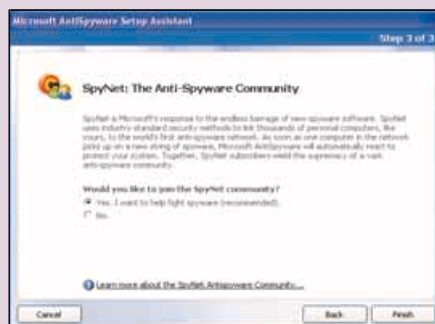
→ STEP-BY-STEP GUIDE

Take a look at Microsoft AntiSpyware

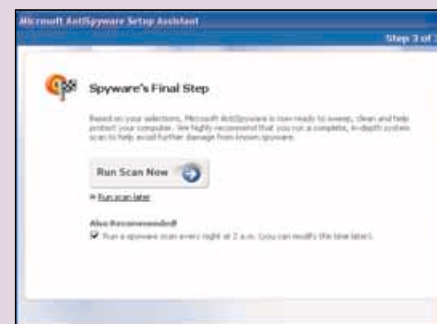
Finally, Microsoft has entered the spyware removal market



01 Download and install *Microsoft AntiSpyware*. The application needs to be configured when it's first run. The Setup Assistant takes you through this process. Click Next to start and opt to keep *Microsoft AntiSpyware* updated automatically.



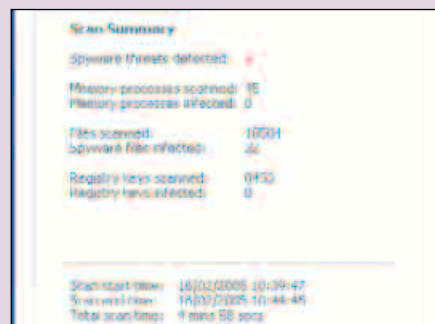
02 Click Next and choose to use Real-time Security Agent protection. This is similar to your anti-virus' continuous protection. Click Next and opt to join SpyNet, which will maintain a global database of spyware. Click Finish.



03 You're now given the chance to set up a daily scan at 2am, although you can modify the time later. Click 'Run scan now' to begin your first system scan for spyware or opt to run the scan later on.



04 You can set up your default scan settings. An intelligent system scan is sufficient for most machines, but you can choose to run a full system scan if you feel that you have a serious spyware problem. Click 'Run Scan Now'.



05 The smart scan examines the most common areas of your PC that become infected with spyware. The full scan looks at every file on your system. Once complete, you'll be presented with a summary of results. Click View Results for details.



06 Next to each identified threat, you can select an action. This may include quarantining the infection, removing it completely or ignoring it, if you believe the file to be innocuous. Click Continue to complete the chosen actions.

Safe practices

Some care and forethought can keep your PC malware free

It may be impossible to avoid contact with malware, but you can reduce your chances of being infected. Avoid installing unnecessary software and check that the programs that you do install come from reliable sources. Windows XP's Attachment Execution Service can help with this, although you may find it helpful to run any potential candidates past Symantec's Security Response first. It's also worth checking the user



Internet Explorer zones can help you to tighten up the security on your PC

reviews on sites such as www.download.com and our own forums to learn of other people's experiences with the program.

Take the now familiar precautions with email attachments and files that you receive via instant messaging programs. Run anti-virus software with continuous protection and consider anti-spyware utilities with similar features. Regularly scan for spyware and Trojans, as well as for viruses. Remove all items of recognised spyware. Delete your browser cookies on a frequent basis to discourage others from tracking your online habits. Ensure that you frequently update Windows or have automatic updates enabled.

Consider increasing security in Internet Explorer to help exclude potentially dangerous active content in unknown or untrusted sites. The

CHECK OUR FORUMS TO LEARN OF OTHER PEOPLE'S EXPERIENCES WITH THE PROGRAM YOU WISH TO INSTALL

annotation demonstrates the Add-on management that was introduced to Internet Explorer in Windows XP Service Pack 2. Disable any add-ons that you don't actively need and those from untrustworthy sources.

It's worth considering using another browser like Mozilla Firefox instead of Internet Explorer. While you'll need to keep IE for your Windows Updates, if you carry out most of your browsing in an environment that isn't aggressively targeted by spyware authors, you're less likely to fall prey to it.

If you must use Internet Explorer, consider increasing its security using its security zones. Choose Tools ->

Internet Options -> Security and choose one of the four zones. Click Default Level to see what security level is in force for this zone. Move the slider to the level you want. Flick through the other three zones, adjusting the security level for each as you wish. High gives least functionality, but is most secure, Low enables all active content to run, but is least safe. Use high security for untrusted and unknown sites. Now add sites to each zone by clicking the Sites button, typing the relevant URL and clicking Add. Repeat for each zone, although the settings for intranet are different as they include sites available on the local LAN. ■

→ AT A GLANCE

Browser add-ons

By keeping close tabs on your Internet Explorer add-ons you can prevent unauthorised software executing

DISABLED ADD-ONS

Those add-ons that you've chosen to disable appear here.

SHOW ADD-ONS

Use this drop-down list to view current add-ons or those that have been used in the past.

PUBLISHER

This column lists the publisher of the add-on. Where it says (unverified), the publisher may not be the one displayed.

SETTINGS

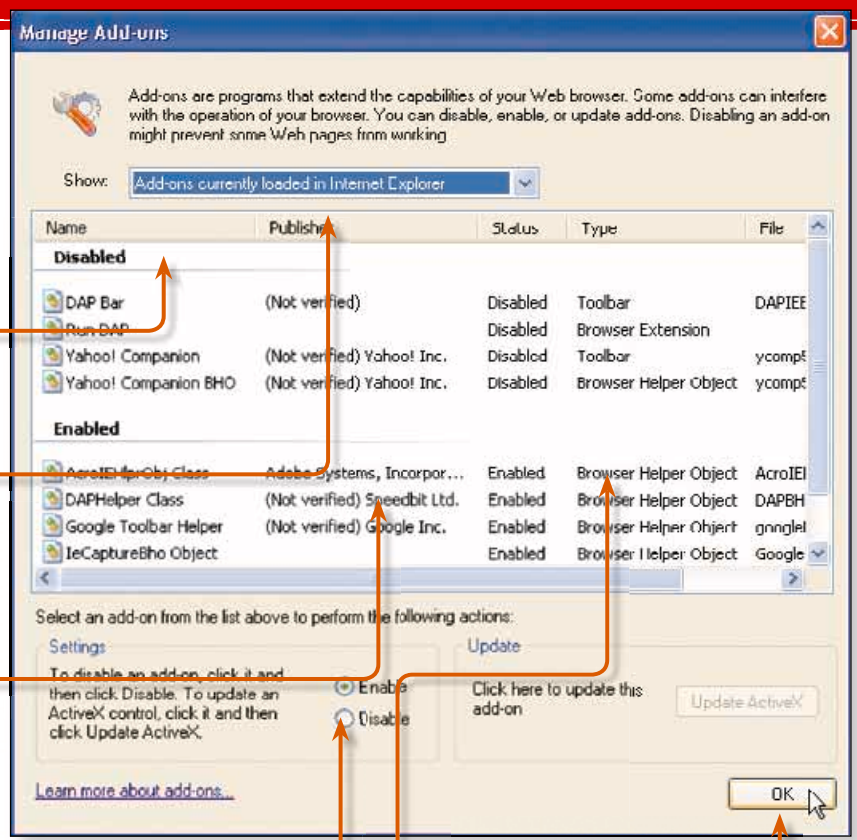
Select an add-on and choose Disable to block it from Internet Explorer.

TYPE

This column displays the kind of add-on it is. It may be a toolbar, a helper object or an extension.

CONFIRM

Click OK to confirm any changes you make. You'll probably have to restart Internet Explorer for them to take effect.



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PHOTO PRINTERS

No doubt you've got a lot of digital pictures on your PC, so why not print them? We review eight of the best photo printers on the market

STARTS ON PAGE 88

'With stunning image quality and cheap running costs, the iP4000 is a great all-rounder'

HOW WE RATE OUR REVIEWS

Translating the percentage score into real-world terms

←50%

Seriously flawed. Something to avoid

50-59%

Neither exceptional, nor terrible. Average, in other words!

60-79%

A good product with a couple of limitations

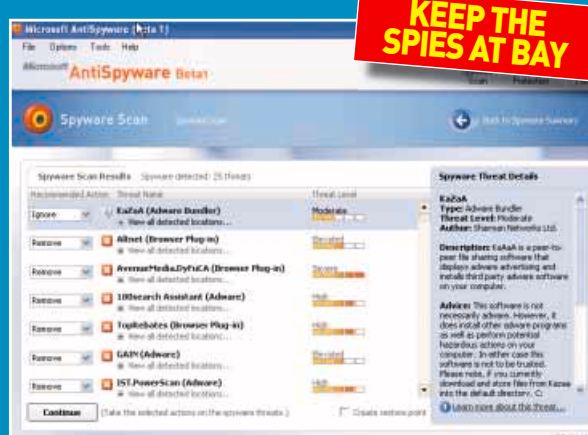
80-89%

An item worthy of your cash

→90%

An exceptional product in every way

→ SECTION CONTENTS



SPYWARE REMOVAL SOFTWARE GROUP TEST

Spyware can be as dangerous as a virus, so you should have some way of dealing with it. This month, we put the leading apps through their paces **PAGE 80**

Roxio BackUp MyPC 6 **P96**
WindowsBlinds 4.5 **P97**
O&O UnErase **P98**
CyberLink DVD Solution 3 **P98**
Tr@nslation Plus **P99**
OOoFF! **P99**
Flash Music Recovery **P100**
Write Your Own Novel **P100**
Toshiba Portégé A200 **P101**
Elonex Lumina **P102**
Shuttle XPC SN25P **P103**
Modem Hi-jack Alarm/Blocker **P104**
AverTV GO 007 FM Plus **P104**
Disc Stakka **P105**
Kyocera FS-720 **P105**

**COOL
GADGETS
P86**





PCA
**GROUP
TEST**
8 OF THE BEST

Anti-spyware

Feel like you're losing the battle against spyware and adware?
Dan DiNicolo puts eight popular detection and removal tools to the test

→ REVIEWED...

Ad-Aware SE	p81
eTrust PestPatrol	p81
McAfee AntiSpyware	p82
MS AntiSpyware Beta	p82
Norton AntiVirus	p83
Spybot-S&D	p83
SpySubtract Pro 2.6	p84
Spy Sweeper 3.5	p84

In October 2004, a report released by the National Cyber Security Alliance (NCSA) estimated that some form of spyware or adware infected eight out of ten PCs connected to the Internet. That's a lot of at-risk systems and these problems present a real threat to computer security and personal privacy.

Many users are starting to take heed of the threats, updating systems with patches and Service Packs, ensuring that personal firewalls and

updated anti-virus software are installed and using alternative browsers such as *Firefox*. However, even these techniques don't remove the threat completely.

With this in mind, we've put eight of the most popular spyware detection and removal tools to the test. The system used for testing was chock-full of spyware and adware. We wanted to determine whether any of the tools available could take a devastated system and clean it up.

The Operating System used for this test was a default installation of Windows XP Home with SP1 installed – no other patches or updates applied. *Internet Explorer* was our browser and the one by which our test system acquired its industrial-strength infestation. We think it'd be very hard to find a system with as much spyware as the one we've tested these tools on. Which anti-spyware programs are up to the task and which are better passed over? Read on to find out.

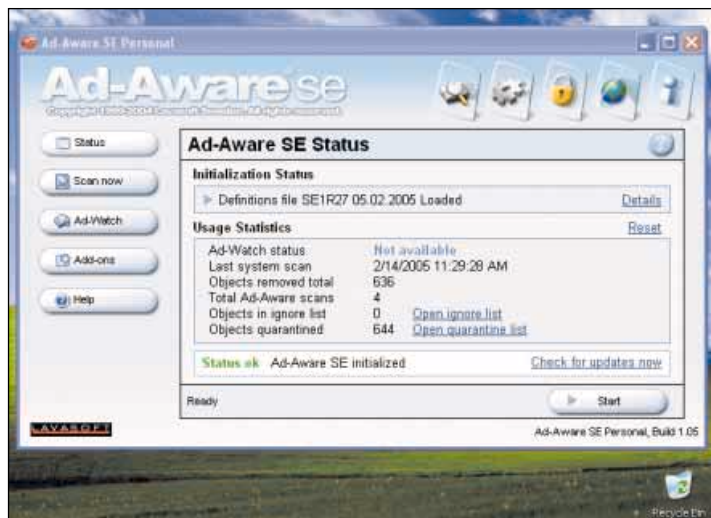
→ PUBLISHER: LAVASOFT

WEB SITE: WWW.LAVASOFT.COM PRICE: FREE

SYSTEM REQUIREMENTS: WINDOWS 98/NT/2000/ME/XP

Ad-Aware SE

We examine whether this popular free tool can cure the malware that ails your PC



It does a great job of detecting issues, but isn't so good on the removal front

In the war against spyware and adware, *Ad-Aware* from Lavasoft has long been considered an industry leader. We used the free edition (*Ad-Aware SE Personal*) for our tests. This is the only version of the tool that Lavasoft makes available for download, and one that we've had much success with in the past. *Ad-Aware SE Personal* offers no real-time protection against spyware, but that wasn't what we were after. We were looking for a tool to remove existing infestations, and expected this one to outperform the competition. At a minimum, we figured it would be near the head of the class.

Ad-Aware is one of the easiest anti-spyware tools to use, which makes obtaining updates and performing scans a breeze. After downloading the latest spyware definitions, we ran the default smart scan, and were presented with a list of over 590 suspect objects. All of the spyware threats that we knew to be present (ISTbar, DyFuCa, CoolWeb Search, Claria, and others) were listed, so things looked very promising.

Unfortunately, the removal process was where the ceiling came crashing down. After selecting the option to delete all found objects, we were prompted to reboot so that *Ad-Aware* could scan again and remove

items running during the original scan. This scan turned up 28 objects that we tried to remove, but our test system hung. We rebooted again, rescanned, and came up with 41 objects. Three scans later, we were finally down to zero.

The war wasn't over

Not wanting to declare the battle won just yet, we rebooted once more and scanned again. This time, our *Ad-Aware* scan revealed 35 objects, including 24 relating to the previously removed ISTbar. Furthermore, a scan with the latest version of Intermute's *CWS shredder* revealed that a CoolWebSearch variant (CWS.HiddenDLL) was still present.

Ad-Aware SE Personal did a decent job of clearing up most issues. However, it shouldn't be relied upon to cleanse a badly infested system.

→ PC ANSWERS VERDICT

Ease of use	●●●●●
Features	●●●●●
Performance	●●●●●
Value for money	●●●●●

→ Overall

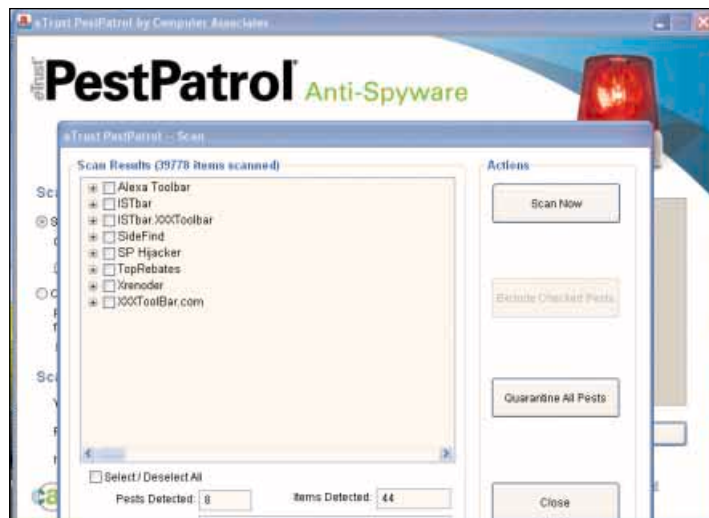
68% Don't expect it to perform a clean sweep if your PC is badly infested by spyware

→ PUBLISHER: COMPUTER ASSOCIATES WEB SITE: WWW.CA.COM

PRICE: £21 (\$40 USD) SYSTEM REQUIREMENTS: 350MHz CPU, 10MB DISK SPACE, 64MB RAM, WINDOWS 98SE/2000/ME/XP

eTrust PestPatrol

Can you trust this software to make your system pest free?



When it comes to scanning speed, we think this tool is hard to beat

We're not sure why CA has a line of security software for home users. Its personal firewall product is a re-branded version of *ZoneAlarm*, so we didn't expect to find anything too ambitious in its anti-spyware tool. However, *eTrust PestPatrol 2005* is one of the more visible anti-spyware products out there, so we decided to give it a chance.

Our test started well enough, with a smooth installation process that offered a glimmer of hope. Next came our initial scan, which really knocked our socks off – *eTrust PestPatrol 2005* performed the fastest scan of all the products tested (by far), almost instantaneously detecting 44 pests and 794 related 'items' (memory processes, files, and registry entries).

Then we began the removal process. Things looked promising heading into the reboot, but our next scan showed nine pests and 45 items remaining. Not willing to admit defeat yet, we scanned again. This time, we found six pests and 14 items. One more shot, and we got the numbers down to five and 13. Two additional scans and reboots later we decided that nothing was going to change unless by way of magic.

As with all of the other software packages we tested, we gave *PestPatrol* a *CWS shredder* scan to

determine whether that might help. CWS.HiddenDLL was detected and removed, but our subsequent spyware scans remained rooted firmly at the five pests and 13 items mark.

Tough pest testing

PestPatrol had a tough time with ISTbar, TopRebates, SideFind, SP Hijacker, and the Alexa toolbar. Other programs had a tough time with many of these issues too, but if we're going to spend money on a tool, we expect it to do its job comprehensively. Computer Associates does have a site where you can perform an online test to detect spyware. However, it only runs in *Internet Explorer*. Of course, after detecting spyware on your PC it offers 'solution advice' in the form of recommending *eTrust PestPatrol 2005*. Until its removal capabilities improve, that's advice you're better off ignoring.

→ PC ANSWERS VERDICT

Ease of use	●●●●●
Features	●●●●●
Performance	●●●●●
Value for money	●●●●●

→ Overall

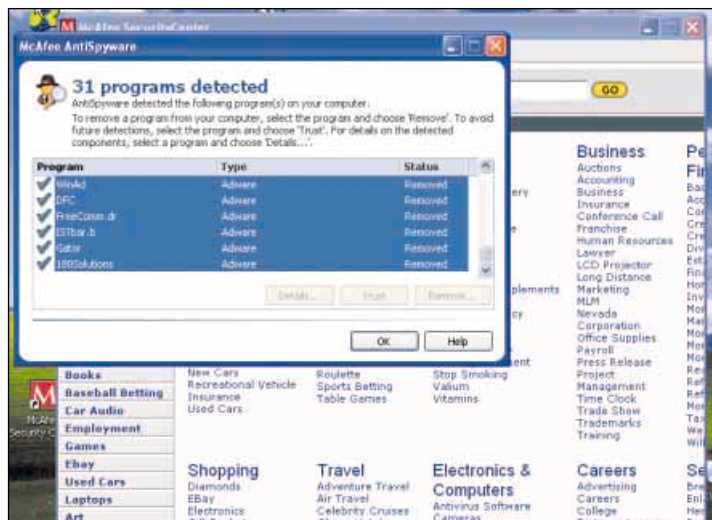
64% Removal results disappointed; your money would be better spent elsewhere

→ PUBLISHER: MCAFFEE WEB SITE: WWW.MCAFFEE.COM

PRICE: £27 SYSTEM REQUIREMENTS: 100MHz CPU, 32MB RAM, 5MB DISK SPACE, WINDOWS 98/2000/ME/XP

AntiSpyware 2005

Can this anti-virus giant compete in the anti-spyware game?



A good tool for clean systems, but don't expect any removal miracles

The McAfee name is almost synonymous with anti-virus, but while being a household name certainly helps McAfee sell more software, our tests made one thing very clear. When it comes to removing spyware and adware from your PC, what's in the box is more important than the name on the box.

Since we're familiar with McAfee's personal firewall software, the fact that *AntiSpyware 2005* works within the *Internet Explorer* environment didn't surprise us. However, on a PC infected by spyware, this does present an issue. Installing *AntiSpyware* also installs the *McAfee Security Center*, and our hijacked browser meant that the *Security Center* home page was hijacked as well.

When we fired *AntiSpyware 2005* up, the program loaded without issue, checked for updates, and then enabled us to start our scan. Once it was done, 31 spyware-related programs had been detected, and the crisp-and-clear interface made us feel confident that this tool was up to the job.

However, our optimism turned out to be unfounded. *AntiSpyware 2005* lacks the basic 'select all' button that you'd expect with a list of detected threats. Instead, you either have to work through fixing issues one at a time, or select them all using

[Ctrl] and click. After selecting the Remove button, the issues listed were successfully removed – apparently. Wanting to be certain, we rebooted and scanned again, to find that the number was no longer zero, but eight.

Removal blues

After rescanning, removing, and rebooting four times, we called it a day. The number of detected issues went down to five, but never got any closer to perfection. When we threw *CWSHredder* into the mix, it again found that *CoolWebSearch* was present, and hadn't been removed. *AntiSpyware 2005* is a paid-for product and we expected more for our money.

AntiSpyware 2005 does a great job of protecting against spyware on clean systems. However, don't rely on this tool to exterminate all of the pests on your system.

→ PC ANSWERS VERDICT

Ease of use
Features
Performance
Value for money



→ Overall

67%

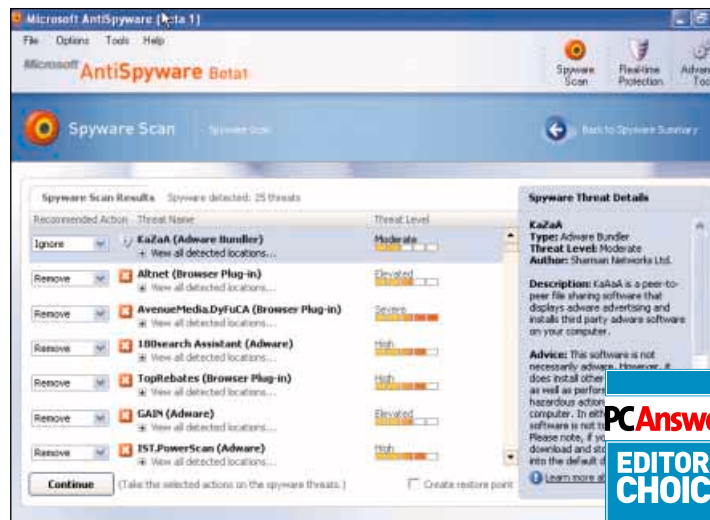
Great for protecting clean systems, but of less use elsewhere

→ PUBLISHER: MICROSOFT WEB SITE: WWW.MICROSOFT.COM

PRICE: FREE SYSTEM REQUIREMENTS: 300MHz CPU, 64MB RAM, 10MB DISK SPACE, WINDOWS 2000/XP/2003, IE6

MS AntiSpyware

It looks as though Microsoft is finally taking spyware seriously, and it's about time



If you've ever used GIANT's AntiSpyware, this tool will look very familiar

You can argue that Windows security flaws are a big part of the reason why spyware and related infestations exist in the first place. However, when a security threat exists, fixing the problem is more important than arguing over where to place the blame. It took a long time, but Microsoft has admitted that a problem exists – by releasing a tool that aims to remove spyware and prevent it from infesting systems.

Microsoft's *AntiSpyware Beta* tool may not be its own work, but it does show strategic thinking. Rather than create its own tool, Microsoft opted to purchase a company with an existing product: GIANT Software. While the testing period isn't over, the pre-release version does look promising.

Alert, alert!

Once we had the tool installed on our test system, it immediately alerted us to the fact that the *Messenger* service was running, and prompted us to shut it down – a good start. Next came our initial scan, which turned up 25 threats, including 812 infected files and 1928 infected Registry keys. *AntiSpyware Beta* also recognised that *IE* had been hijacked, and prompted us to restore all browser settings.

After restarting Windows XP, our next scan turned up eight remaining

threats, which were all removed. Unfortunately, firing up *IE* showed it was still at odds with the browser hijack. Another reboot and scan later, and the hijack was still present.

Giving it yet another chance, we started up *CWSHredder*. This tool confirmed that *CWS.HiddenDLL* was still present on the system, and we allowed it to repair the issue. After rebooting and rescanning with the *AntiSpyware Beta* one more time, all issues appeared to be resolved. As a final test we used *IE* – the browser hijack was gone, and everything was back to normal.

While we didn't like the fact that *AntiSpyware Beta* couldn't remove *CoolWebSearch*, it did handle everything else with relative ease. We're still waiting to see what the final version holds, but this free tool looks very promising indeed.

→ PC ANSWERS VERDICT

Ease of use
Features
Performance
Value for money



→ Overall

90%

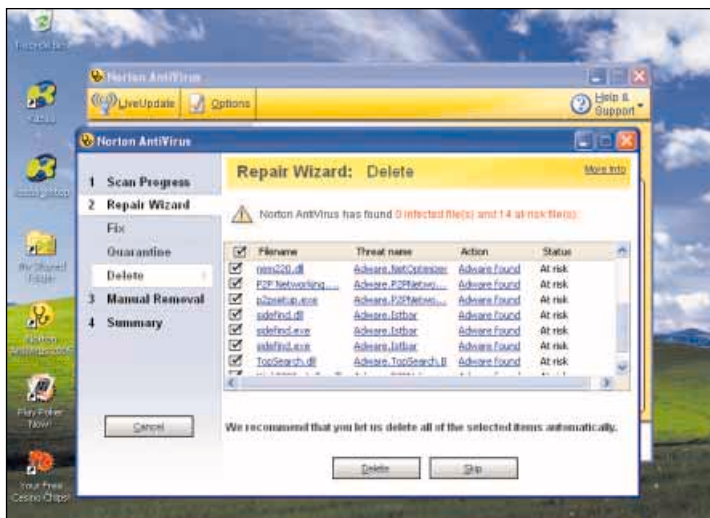
Microsoft scores with the cream of this crop, but the final version needs a fix for CWS

PCAnswers
EDITOR'S
CHOICE

→ PUBLISHER: SYMANTEC WEB SITE: WWW.SYMANTEC.COM PRICE: £34
 SYSTEM REQUIREMENTS: 300MHz CPU, 128MB RAM, 125MB DISK SPACE,
 WINDOWS 98/2000/ME/XP (NON-XP SYSTEM REQUIREMENTS LOWER)

Norton AntiVirus

Should you rely on anti-virus software to sort your spyware situation?



For an anti-virus program, NAV has excellent spyware detection capabilities

We admit that putting Norton AntiVirus 2005 into a group test looking at anti-spyware tools may not be completely fair, but it had to be done. Symantec's Web site claims that NAV protects against 'emerging threats', the term it uses to describe spyware, adware, and other malware risks. With that in mind (and the fact that many users believe that anti-virus software automatically protects against all types of infection), we decided that we should at least test to see where this tool fits into the mix.

With a focus on viruses, we didn't hold much hope for NAV's anti-spyware capabilities. However, we installed the software, went through the update process, and started our scan. Nothing fancy, just the same system scan that one would use for viruses. While it took longer than the other tools we tested, that's understandable: NAV is scanning for viruses, as well as spyware threats.

Interesting results

The results announced that 28 issues had been detected and walked us through deleting 12 of these. Those that weren't automatically removed were listed as potential threats. While NAV couldn't remove these on its own, each of the found items was

hyperlinked. Clicking on a given link went to a page on the Symantec Web site that outlined the issue in detail. These pages always provided either a link to download a removal tool for that specific threat, or detailed instructions outlining how to remove the issue manually. We were a little disappointed that NAV couldn't do the job on its own, but we did appreciate the heads-up. It wasn't completely automated, but the necessary steps to deal with the problems were provided.

Ultimately, you can't rely on NAV to perform a clean sweep of any spyware or adware already present on your computer. However, the program doesn't claim to be able to solve all of these problems. What it does do though, is help you work through the issues in a constructive way – something that other anti-spyware developers should take note of.

→ PC ANSWERS VERDICT

Ease of use
 Features
 Performance
 Value for money



→ Overall

75% Good detection, but removal tools and techniques could be better integrated

→ PUBLISHER: PATRICK M. KOLLA
 WEB SITE: WWW.SAFER-NETWORKING.ORG/EN/INDEX.HTML PRICE: FREE
 SYSTEM REQUIREMENTS: WINDOWS 95/98/NT/2000/ME/XP

Spybot-S&D

Will a little Search & Destroy action rid your system of spyware for good?



Spybot-S&D responsibly starts off with a Registry backup before scanning

While many formerly free spyware detection and removal utilities have become commercial entities, *Spybot-S&D* (as in Search and Destroy) remains true to its beginnings. This tool is still available as a free download, with the author asking for nothing more than a donation if you find the tool useful and can afford to do so.

Goodwill, spirit, and hard work can go a long way towards creating a great piece of software. The question remains, however, whether a free tool created and maintained by an individual can keep up with the constantly changing spyware landscape. While these threats were once almost trivial to remove, they've become increasingly sophisticated and harder to dislodge. So, free or not, we had to put this tool to the test. One thing we loved right off the bat was that we were prompted to back up our current Registry, just in case any removal issues arose. Next up was downloading all updates for the software, and another smooth ride.

The details

Our initial *Spybot-S&D* scan resulted in it finding 166 problems. Of these, 129 were fixed automatically, and we were prompted to reboot to take care of the 37 remaining issues. Once this process

was complete, the tool gave us the 'thumbs up', telling us that zero issues remained.

Of course we weren't going to leave things there. Running *CWSHredder* found and removed our resident CWS issue. Then we scanned again and found that two items could not be removed, namely *iSearch* and *WinSecure*, both of which are known browser hijacks. Unfortunately, subsequent scans could not resolve these issues completely.

Overall, *Spybot-S&D* did an admirable job of cleaning up the vast majority of issues on our test system. In fact, it performed much better than most of the commercial tools we tested. We've been using this tool on many of our systems for quite some time, and outside of CWS, this is the first time it hasn't caught everything we've thrown at it.

→ PC ANSWERS VERDICT

Ease of use
 Features
 Performance
 Value for money



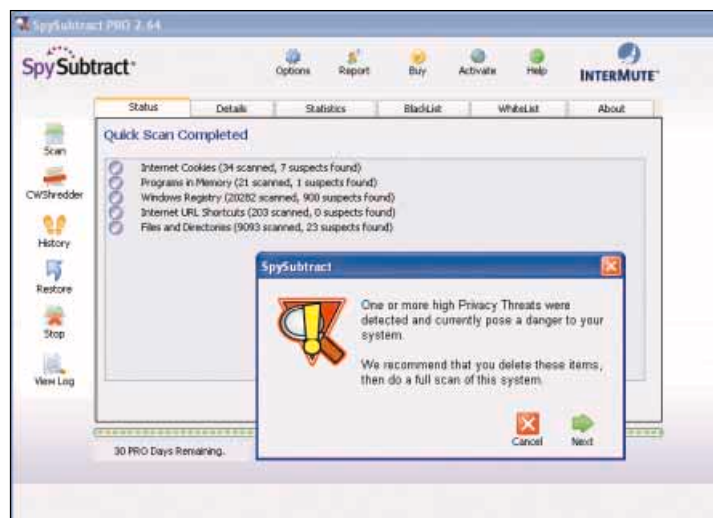
→ Overall

78% A great showing for one of the last free and non-commercial spyware scanners

→ PUBLISHER: INTERMUTE WEB SITE: WWW.INTERMUTE.COM PRICE: £16 (\$30 USD)
SYSTEM REQUIREMENTS: PENTIUM, 5MB DISK SPACE, 64MB RAM, WINDOWS 98SE/2000/ME/XP

SpySubtract Pro 2.6

Here's a spyware scanner from the new owners of CWSHredder



SpySubtract is the only anti-spyware tool with CWSHredder built in

We admit that we expected big things from *SpySubtract* before rigging it up on our test system. Its developer (InterMute) recently acquired the only reliable tool for removing the troublesome CoolWebSearch pest, the invaluable *CWSHredder*. While they still make *CWSHredder* available as a separate (and free) download, it's also built into *SpySubtract* – a major bonus for those of us with a preference for a single-source solution.

Shredder hopes

As *SpySubtract* includes *CWSHredder*, we had high hopes for the tool. After all, if it can get rid of the peskiest pest around, it should be able to handle everything else, right? After installing the tool, it found ten 'high privacy threats' running. We were prompted to delete these items and reboot. Next, we performed the Quick scan, which turned up over 900 items. We selected to delete all of these, and were prompted to upload information on one process (istsvc.exe) to InterMute's servers, based on the fact that it appeared suspicious.

After rebooting and scanning yet again, everything was gone with the exception of the Integrated Search Technologies (ISTbar) pest. We chose again to remove all of its related

items, but couldn't shake this one issue. From here we performed a scan with the built-in *CWSHredder* component, which found and removed CWS.HiddenDLL. Another reboot and Quick scan later, and the ISTbar issue was still present.

Overall, *SpySubtract* did a better job than most of the tools reviewed. Users will also appreciate the Venus Spy Trap feature, which blocks known spyware and adware threats before they have the chance to infect your system. There's little question that *SpySubtract* is a serious player in the anti-spyware world. While it didn't remove everything, it certainly came closer than most. The inclusion of *CWSHredder* is awesome, but as a tool available to everyone, offers little in the way of a competitive advantage. *SpySubtract* is on the right track, and likely has a bright future ahead of it.

→ PC ANSWERS VERDICT

Ease of use
Features
Performance
Value for money

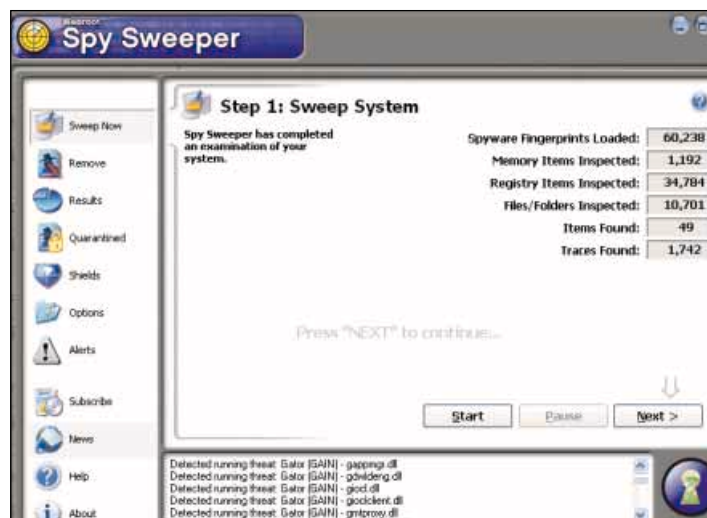
→ Overall

82% CWS removal capabilities alone ensure this tool has a promising future

→ PUBLISHER: WEBROOT WEB SITE: WWW.WEBROOT.COM PRICE: £11 (\$21 USD)
SYSTEM REQUIREMENTS: 300MHZ CPU, 20MB DISK SPACE, 64MB RAM, WINDOWS 98SE/2000/ME/XP

Spy Sweeper 3.5

An anti-spyware program that claims it can defeat CWS



Spy Sweeper includes an impressive array of protection tools that are easy to master

We're not big on the marketing messages that accompany any piece of software, but the one on Webroot's Web site caught our attention. It mentioned that *Spy Sweeper 3.5* 'defeats CoolWebSearch, a notorious home page hijacker'. In the anti-spyware arena, those are big words, so we were curious as to how well this contender would perform in our tests.

Opening *Spy Sweeper 3.5* launches a check for updates and then it moves into a scan. Our initial scan found 49 items and a total of 1748 traces. After choosing to remove these items, we rebooted and scanned again. This time around, the number of items found was reduced to five, with 55 remaining traces. Another reboot, another scan, and only two issues were left – a variant of CoolWebSearch known as CWS.AboutBlank, and a Trojan called Spooner-A.

Testing times

By this point we began to think that *Spy Sweeper* had lost all credibility on the CWS front. However, we gave it one more scan as a last chance, and poof – CWS was gone. Spooner-A remained, however, so just to be on the safe side we rebooted and scanned yet again. Unfortunately, Spooner-A just kept coming back. The

fact that *Spy Sweeper* managed to defeat CWS is impressive, even if it didn't result in a clean sweep overall.

Equally impressive is the great feature set included with this program. You'll find plenty of helpful tools, especially if you dig around in the Shields section. *Internet Explorer* shields actively stop browser hijacking, and changes to your Favorites list, for example. If you're looking for a quick way to block *Messenger* spam, just pop into the Windows System section and enable the Windows Messenger Service shield.

Overall, *Spy Sweeper 3.5* appears worthy of further attention. Even without 100 per cent accuracy on the removal front, it includes an impressive array of tools that ensure it'll be able to compete in this space. Time will tell whether it can continue to defeat new CWS variants, however.

→ PC ANSWERS VERDICT

Ease of use
Features
Performance
Value for money

→ Overall

81% Offers great performance and great options, even for non-XP users

ANTI-SPYWARE

And the winner is...

Buying a GIANT turns out to be a smooth move for Microsoft

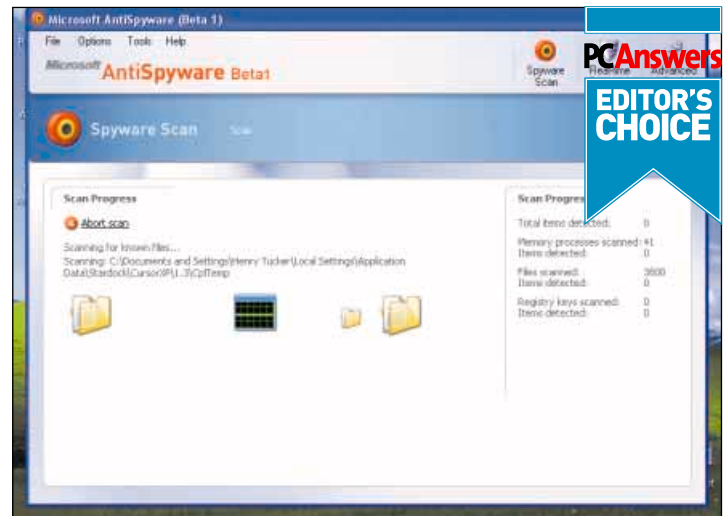
It's hard to argue with good performance and even tougher when it's provided free of charge. Perhaps the most amazing thing about *Microsoft AntiSpyware Beta* is that it's still only a beta product. Granted, this tool is a retread, the result of Microsoft's recent purchase of anti-spyware vendor GIANT Software. However, it represents a marked shift in how Microsoft is approaching system security and spyware threats in particular. Rather than circle around some of the issues that abound with *Internet Explorer*, Microsoft is now providing a tool to help users deal with the issues at hand.

Some might argue that Microsoft started taking spyware seriously with the release of Windows XP SP2, but we disagree. Millions of systems were already infected prior to its release,

and Service Pack 2 did little to resolve any existing issues. *Microsoft AntiSpyware Beta* helps to close the gap by not only removing existing issues, but also by actively monitoring systems to prevent reinfection – and we think that's definitely a step in the right direction.

Certainly, all of the work isn't done yet. The fact that it can't remove troublesome CWS variants is a cause for concern, but we'll reserve judgment until the final version is released. There's good news on that front too – Microsoft has announced that the final version will also be free, something that wasn't made clear with the release of the beta.

If you do choose to go with *AntiSpyware Beta*, you should definitely consider enabling the tool to forward new threat information to the SpyNet *AntiSpyware* Community.



AntiSpyware Beta more than met our expectations. We hope the final version does, too

This system automatically catalogues new threats as they are detected, using anonymous information provided by *AntiSpyware* user's systems. Ultimately, new 'signature' information helps to protect everyone against the latest and potentially dangerous spyware threats.

Besides the CWS issues, the only problem with Microsoft's *AntiSpyware Beta* is that it only works with Windows 2000, XP, and Windows

Server 2003. That means no Microsoft spyware solution for Windows 98 and ME users, but thankfully some good alternatives do exist, as outlined in this group test.

Finally, we apologize if we sound over-excited – it's been a while since we've come across a Microsoft product that we found inspiring. We can only hope that the final version of *Microsoft AntiSpyware* will keep us feeling this way. ■

→ FURTHER INFORMATION

How we tested

Take one very infested system, add one part anti-spyware...

First and foremost, it's important to understand that testing spyware removal tools is not a perfect science. Every anti-spyware tool that we looked at recognised and categorised threats a little differently. Some deemed every suspect file or Registry entry as an object or issue, while others grouped threats in different ways. So what *Ad-Aware* sees as 590 objects could be exactly the same as the 166 problems detected by *Spybot-S&D*.

However, we did use a consistent environment in our tests. We created an

image of a badly infected system, and used the same one for each of the removal tools. The infections were acquired by visiting Web sites known to infect systems by way of *Internet Explorer*, and it didn't take long. Within 20 minutes, our test system had acquired everything from a CWS variant, to ISTbar, to Gator and much more.

We purposely went with Windows XP SP1 to maximise our chances of infection – SP2 certainly does a better job of protecting systems, though it's not perfect. There was no anti-virus software installed on the test

system, but XP's Internet Connection Firewall feature was enabled through the acquisition process.

While we know our level of infection was extreme, we gave each program that we reviewed multiple scan attempts (and even a little help with pesky CWS) to come clean. Ultimately, our test was closer to a worst-case scenario than average. With a little luck, the better performers in our group test should be able to resolve any spyware issues presents on your computer with much less effort.



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450W £74

www.thecoolingshop.com

It's easy to make most parts of your PC look more interesting. You can add a colourful motherboard and graphics card, even memory with LEDs... but what about your PSU? These are usually the same dull, silver box that came with your case. It doesn't have to be this way. The Real Power 450W from CoolerMaster not only has all the connectors you could ever want – seven Molex and two SATA – but it also glows blue. How cool is that? If that wasn't enough, it has an additional front panel that tells you exactly how much load your PC is putting on the PSU.



COOL GADGETS

Cliff Hope casts his expert eyes over a cornucopia of goods designed to press your technological buttons

SEAGATE 5GB POCKET HARD DRIVE £94

www.dabs.com/uk

No, it's not a yo-yo, but an external storage solution that fits – literally – into the palm of your hand. The 5GB micro-drive is self-powered, so there's no need for a separate power supply or even a powered USB2 cable. What you see is all you need to take your data on the road. Seagate's supplied the utilities you'd expect with a hard-drive solution, including a secure partitioning app. Given that the drive is meant to be wholly portable, it feels a little slight and could do with an extra protective layer. Maybe something in rubber? (OK, moving swiftly on – Ed)

DELL PHOTO PRINTER 540 £141

www.dell.co.uk

If you have a digital camera, don't just leave your shots on your PC – print them out! Dell's 540 is ideal for doing just that. Unlike many similarly priced printers, it uses a thermal dye transfer process that creates an image through four passes of the print head. Forty-five seconds later: one finished print. The thermal process doesn't use standard inks, but a ribbon that has enough ink for 40 prints. Ribbons are sold with packs of 40 sheets of photo paper. These cost £14, which works out at 35p per print. Most importantly, the results are excellent and as good as your standard high-street prints.



SAITEK NOTEBOOK OPTICAL MOUSE £10

www.saitek-estore.co.uk

So, you've bought a high-spec laptop for business or pleasure. That doesn't mean that you have to put up with its temperamental trackpad or trackpoint. Get yourself a decent optical mouse that's suited for notebook use and you're laughing. OK, so we did have a chuckle at Saitek's shocking pink colour scheme, but thankfully 14 shades are available, including cream and metallic blue. The three button/scroll wheel mouse will suit left- and right-handed users, and its optical sensor works on all surfaces.



GENIUS MAXFIRE LIBRE

£TBC

www.geniusnet.com.tw

Cables – there ought to be a law against them. The MaxFire has nothing to fear from the Tangled Wire Police, thanks to its wireless origins. Now you'll be able to play games on your PC from all corners of the room. Genius claims that the game pad has a range of 10 metres. As well as featuring analog and digital controls there's also a vibration feature, which means a rumble in the jungle really will feel like the real thing. Gamers take note: it's also compatible with the PlayStation 2.



PRO STARTER 2 £48

www.goextra.co.uk

If you need power on the move, then look no further. Although designed as an emergency power pack for starting your car, the built-in cigarette lighter socket means you can plug any 12V device in for instant power. The unit holds its charge from the factory for five years and is rechargeable in under two hours. With a suitable adaptor, the Pro Starter 2 can power your laptop, or other peripherals, or you could just use it to charge your phone.





Photo printers

Can inkjet printers really rival professional photo labs for image quality?
Matthew Richards puts eight of the latest models to the test

While digital photography is busy banging the last few nails into the coffin of 35mm film, photo printing is in the throes of a similar revolution. Online printing services such as PhotoBox (www.photobox.co.uk) are springing up all over the Web, just as while-you-wait photo print kiosks are taking over the high street. Nothing, however, competes with the convenience of being able to print your own photos at home, direct from your PC. That's where photo inkjets come in.

General-purpose colour inkjet printers, with their conventional arsenal of cyan, magenta, yellow and black inks, can print just about all the colours of the rainbow. However, when it comes to the finer points of subtly graduated blue skies, the richness of landscape colours, or the delicate variations of skin tones, four colours are never enough. What's needed

blue inks, as well as both gloss black and matte black inks, and even a 'gloss optimiser' cartridge to ensure an even finish.

Not to be left out, HP also offers an eight-ink printer in the Photosmart 8450. This one is a bit different, however, in that the eight inks include a three-tone 'Grey' cartridge, which offers black, dark grey and light grey. HP claims that this cartridge does an equally good job of extending the printer's colour space, while also enabling class-leading black and white photo printing.

But there's a catch...

The more ink colours you add to the mix for photo printing, the less suitable the printer becomes for general-purpose, workaday output. The HP and Lexmark printers on test offer a solution to this

EVEN A PRINTER WITH SIX INK COLOURS CAN COME UP SHORT IN TERMS OF COLOUR SPACE

is extra ink colours to recreate the wider 'colour space' typical in real-world photography. Normally, these extra colours come in the shape of photo cyan and photo magenta (light versions of the original colours) that are added to the overall mix, giving the printer six inks to build from rather than just four.

To keep pace with the best of the latest digital cameras, even a printer with six ink colours can come up short in terms of colour space. Canon, Epson and HP have upped the stakes with their high-end photo printers, adding extra colours to the range. For example, the Canon iP8500 uses the traditional range of six dye-based inks (CMYK, PC, PM) but also adds red and green inks to give a greater colour range. Epson does something similar with its Stylus Photo R800, which includes red and

problem, enabling you to swap out the 'Photo' cartridge for an optional black cartridge, so you can revert to a four-ink line-up for general-purpose printing. However, there can be a sting in the tail when it comes to running costs, as both the Lexmark and HP printers use three inks in each tri-colour or photo cartridge, so you can easily end up throwing away sizeable quantities of two remaining inks in a cartridge just because the other colour has run out. On the plus side, you do get a brand new print head with every cartridge you buy, because unlike the Canon and Epson printers the print heads are built into the cartridges rather than fixed in the printers themselves. The ultimate proof, however, is in the print quality, so let's check out how each model performs.



PCAnswers

EDITOR'S
CHOICE

→ MANUFACTURER: CANON PRICE: £89
RETAILER'S WEB SITE: WWW.COMET.CO.UK
FEATURES: BUBBLEJET, 4,800 X 1,200DPI (2.0PL), 5 INKS (5 CARTS), 17PPM

Canon PIXMA iP4000

Cheap and cheerful, the iP4000 flies in the face of conventional photo printing wisdom

While many new photo printers are increasing their ink line-ups from six to eight colours, to boost the overall colour space, the iP4000 works with a mere five inks. To make good photo performance even more improbable, two of those colours are black. What you get under the bonnet is a bog-standard range of CMYK dye-based inks, plus a pigment-based black ink that Canon claims can increase the quality of photo reproduction using its ContrastPLUS system. What's amazing, though, is how well the system works.

Good tonal range

The overall colour rendition is surprisingly accurate although, to be picky, dark colours and some flesh tones can tend to look slightly washed out. Even so, the tonal range and contrast is excellent, especially compared with older Canon models.

In terms of design, the iP4000 is beautifully finished, with a hideaway main input paper tray tucked under the printer. This leaves the more conventional vertical tray on top of the

printer free for photo paper. Borderless prints on 4 x 6, 5 x 7 or full A4 were created with great speed and ease in our tests, with the iP4000 being one of the fastest printers in the group.

Another singular advantage of the pigment-based black ink in the iP4000's arsenal is that this makes the printer ideal for fast, cheap, high-quality mono printing as well as for photos. This makes the Canon ideal for those who want a single printer that can cope with general-purpose as well as photo printing, without the hassle of having to change cartridges like on the HP or Lexmark models. At the price, the iP4000 is a spectacularly good choice.

→ PC ANSWERS VERDICT

Ease of use
Features
Performance
Value for money



→ Overall

93%

With stunning image quality and cheap running costs, this is a great all-rounder



→ MANUFACTURER: CANON PRICE: £149
RETAILER'S WEB SITE: WWW.PIXMANIA.COM
FEATURES: BUBBLEJET, 4,800 X 1,200DPI (2.0PL), 6 INKS (6 CARTS), 9PPM

Canon PIXMA iP6000D

Feeling greedy? Here's a PIXMA printer that offers an extra bit on the side

Most of Canon's new PIXMA range of printers have extraordinarily clean lines. By contrast, the iP6000D bristles with buttons and a colour LCD screen, intended for making the most of direct photo printing via its PictBridge camera port or using the built-in multi-format flash memory card reader.

The iP6000D works well as a standalone photo printer thanks to its range of control buttons and simple interface, that offers features such as colour balancing, trimming, variable brightness and even special effects. However, whether you're printing direct or from your PC, the main attraction is the superb image quality.

are slow, of mediocre quality and work out expensive on ink. This really is a photo printer first and foremost.

The most noticeable advantages of photo printing with the iP6000D over the iP4000 is that colours are a little more saturated. Flesh tones are a little richer, skies are a little more blue and even mid-tone greys are a little darker. However, what you gain in colour you can lose, at least very slightly, in contrast. Some of our test photos had a tiny bit more impact when printed on the iP4000, compared with the slightly more restrained iP6000D. Even so, the overall quality is brilliant.

→ PC ANSWERS VERDICT

Ease of use
Features
Performance
Value for money



→ Overall

89%

Superb image quality and great standalone printing features. Highly recommended



→ **MANUFACTURER:** CANON **PRICE:** £299
RETAILER'S WEB SITE: WWW.CAMERAS2U.COM
FEATURES: BUBBLEJET, 4,800 X 2,400DPI (2.0PL), 8 INKS (8 CARTS), 15PPM

Canon PIXMA iP8500D

This printer has stunning colour range, but is it really worth the money?

It's not until you print out your photos on an iP8500 printer that you see what you're missing on your LCD monitor. With no less than eight ink colours, including separate red and green tanks, the colour space of Canon's top-of-the-range A4 photo printer is immense. In fact, the iP8500 uses the same cartridge line-up as the spectacular Canon i9950 A3+ photo printer (reviewed in issue 143).

Apart from the cartridge fit, the iP8500 looks almost identical to the cheaper iP4000. You get the same dual-paper feed as on other PIXMA models, complete with a control button for switching between lower and upper paper input trays. You also get a PictBridge port for direct photo printing, although none of the control niceties or colour LCD screen sported by the iP6000D. This means that you're paying top dollar for those extra two colours of ink. Is it really worth it?

For muted landscape shots and subtle portraits, the extra colour range of the iP8500 is often unnoticeable. There's more of a difference with brightly lit and highly saturated colours,

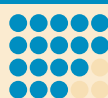
and the printer comes into its own with vivid colours, like those often associated with action sports photography.

Saving the pennies

On this printer, the separately replaceable ink tanks are a real money-saver. In our tests, the red and green tanks lasted around eight times as long as the photo magenta and photo cyan cartridges. This means that, even though a full set of cartridges for the iP8500 costs around £65, it's hardly any more expensive to run than the iP6000D in real terms. For top colour performance, the iP8500 is unbeatable and it's quick, too.

→ PC ANSWERS VERDICT

Ease of use
Features
Performance
Value for money



→ Overall

87%

Top for colour range and rendition, but comes with a weighty price tag



→ **MANUFACTURER:** EPSON **PRICE:** £76
RETAILER'S WEB SITE: WWW.MORECOMPUTERS.CO.UK
FEATURES: MICRO PIEZO, 5,760 X 1,440DPI (3.0PL), 6 INKS (6 CARTS), 15PPM

Epson Stylus Photo R200

Cheap but cheerful, the baby Epson has lots to offer, at least in terms of print quality

If you just want great photo print quality without any the frills, the basic Epson R200 is a great value buy. At £76, it's the cheapest printer on test, yet the R200 still packs plenty of photo punch with its six-ink line-up. Better still, each ink is supplied in its own replaceable ink tank, unlike many of Epson's older photo inkjet printers. Even so, the R200 is a bit pricey to run with relatively high ink prices, especially when you consider that, unlike HP and Lexmark printers, the print heads are a permanent fixture of the printer itself and not renewed as part of the ink cartridges.

Photographic appeal

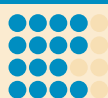
In our tests, colour rendition was accurate, especially for natural landscape shots and skin tones, although vivid colours were slightly muted. Tonal range was also accurately reproduced, adding further to the printer's photographic appeal. There's no PictBridge support or built-in media card reader for direct photo printing, but if you pay around £15

extra then the slightly more up-market Epson R300 adds all this to the basic R200 printer, while the R300M adds a colour photo preview screen as well, and costs about £140.

One fly in the ointment is that the R200 is slow for mono text printing and, like most dedicated photo printers, black text pages look quite greyish. This limits the appeal of the R200, or any of its more expensive derivatives, for those wanting a single printer that can handle both general-purpose and photo printing. However, if you're only interested in printing photos, the budget Epson offers spectacular quality at the price.

→ PC ANSWERS VERDICT

Ease of use
Features
Performance
Value for money



→ Overall

82%

Superb photo quality considering the reasonable asking price



→ **MANUFACTURER:** EPSON **PRICE:** £215
RETAILER'S WEB SITE: WWW.DABS.COM
FEATURES: MICRO PIEZO, 5,760 X 1,440DPI (1.5PL), 8 INKS (8 CARTS), 8PPM

Epson Stylus Photo R800

The upmarket Epson aims to paint its pictures with an exceptionally even gloss finish

It's interesting to see how different manufacturers have gone about the business of extending the colour space of their inkjet printers. While Canon adds red and green inks to the line-up of its iP8500 printer, Epson has added red and blue inks for the R800. More surprisingly, Epson has taken photo cyan and photo magenta out of the mix altogether, and the eight-strong ink arsenal includes instead both gloss and matte black inks, as well as a 'gloss optimiser', aimed at giving the smoothest and most even of photo finishes.

Gloss with a hint of dull

In our tests, the R800 performed well, with accurate colour rendition for both subtle pastels and vivid colours alike. Tonal separation was also good with clearly defined reproduction in the subtleties of highlight and lowlight areas of photos. However, in spite of the gloss optimiser, the overall photo results looked slightly on the dull side compared with any of the Canon printers. The R800 is also a pricey printer to run. Using our range

of test photos, the Epson worked out to be the second most expensive on ink, almost as dear as the Lexmark.

The R800 has a good turn of speed, outputting 4 x 6-inch photos in top-quality mode in as little as one minute, 16 seconds. This is in spite of the fact that the small ink droplets fired by the R800 are the tiniest on test, at just 1.5 picolitres. However, like the much cheaper R200, this big boy of Epson's photo printer line-up has no direct-photo, standalone printing facilities, which is a surprise considering the price tag. The print quality is technically good, but photos lack a little of the Canons' 'wow factor'.

→ PC ANSWERS VERDICT

Ease of use
Features
Performance
Value for money



→ Overall

78%

Accurate colour and tonal separation, but rather pricey to run



→ **MANUFACTURER:** HP **PRICE:** £134
RETAILER'S WEB SITE: WWW.COMPUTERWEBSTORE.CO.UK
FEATURES: THERMAL INKJET, 4,800 X 1,200DPI (5PL), 6 INKS (2 CARTS), 20PPM

HP Photosmart 8150

Colour or black and white? Take your choice with the new photo-friendly Photosmart 8150

The new HP Photosmart 8150 is certainly a tasty looking piece of kit, with an attractively styled silver and black finish. There are plenty of knobs and buttons to play with as well, plus a colour LCD preview screen. This is all to make use of the HP's direct printing facilities via its PictBridge port or multi-format card reader (see the Photosmart 8450 review opposite for further details).

Tray selection

The printer also features two paper input trays, although they're not quite as versatile as the ones on Canon's PIXMA range: the upper one only accepts 4 x 6-inch photo paper. Frustratingly, if you forget to push the manually adjusted paper tray selection slider to the right position before printing, you'll probably get your print-out on the wrong paper, wasting both ink and paper.

Using the standard cartridge line-up, the 8150 produces photos from six ink colours: cyan, magenta and yellow from the tri-colour cartridge and photo cyan, photo magenta and photo black from the 'photo' cartridge. This provides a good range of colour, with accurate skin tones and a nice

balance between vivid, striking colours and more pastel shades. You can swap out the photo cartridge for a straightforward mono one for faster general-purpose printing, and another option is to use HP's No 100 grey cartridge that includes light grey, dark grey and photo black for excellent black and white photo printing results. Unlike the 8450, however, you can't add the grey cartridge at the same time as the tri-colour and photo carts, for eight-ink printing.

Speed is reasonable in the 'Best' mode photo setting, which enables 600dpi printing but printing in the 'Max Resolution' mode takes half as long again (three minutes for a 4 x 6-inch borderless photo), with little discernable improvement in quality.

→ PC ANSWERS VERDICT

Ease of use
Features
Performance
Value for money



→ Overall

80%

Average speeds and odd design apart, this is a good performer



→ **MANUFACTURER:** HP **PRICE:** £222
RETAILER'S WEB SITE: WWW.TECHNOWORLD.COM
FEATURES: THERMAL INKJET, 4,800 X 1,200DPI (5PL), 8 INKS (3 CARTS), 20PPM

HP Photosmart 8450

HP's new eight-ink printer takes a novel approach to colour space, but does it work?

To be honest, we were a bit sceptical about HP's claims that adding extra shades of grey ink to the process can expand the overall colour space. Yet with its line up of traditional six-colour photo inks plus light and dark grey, the Photosmart 8450 manages to bring an extra warmth and subtlety to skin tones, while adding richness to more saturated colours, at least compared with the Photosmart 8150.

Image tools

Similarities to the less-expensive 8150 include the same double input paper tray arrangement and standalone printing features. Both printers feature a colour preview screen and controls for not only direct printing from PictBridge-compatible cameras or memory cards, but also for trimming, framing, sharpening and lightening photos, as well as applying special colour effects and even removing red-eye, which can be pretty handy.

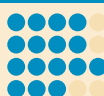
In terms of speed, the 8450 is a bit on the slow side, even compared with HP's cheaper 8150, taking two minutes and 30 seconds to print a 4 x 6-inch borderless photo in our

tests, and over three-and-a-half minutes in 'Max Resolution' mode. It has to be said that the latter does little to improve the overall picture quality and, in most cases isn't worth the extra printing time.

While a mono cartridge is an available optional extra for general-purpose printing, the full set of 'photo' cartridges, including tri-colour, photo and grey, work out to £60 between them. This is pretty good value by HP's past standards, partly due to the fact that both the 8450 and 8150 printers use the company's new generation of ink cartridges. The only real problem you might have with the 8450 is fitting it on your desk, as it's wide and almost as large as some A3 printers.

→ PC ANSWERS VERDICT

Ease of use
Features
Performance
Value for money



→ Overall

76%

Good photo quality, but expensive to buy and a little slow



→ **MANUFACTURER:** LEXMARK **PRICE:** £95
RETAILER'S WEB SITE: WWW.SIMPLY.CO.UK
FEATURES: THERMAL INKJET, 4,800 X 1,200DPI (5PL), 6 INKS (2 CARTS), 15PPM

Lexmark P915

And now for something completely different – it's time for the Lexmark P915

When you consider the sub-£100 price tag, it looks like the Lexmark P915 is a bit of a bargain, especially when you take into account its extra features. Included is a multi-format flash card reader, PictBridge port, colour preview screen and a handy range of control buttons for standalone photo printing. However, dig a little deeper and you see that there's less to the P915 than meets the eye.

Compared with the other printers in this group test, the P915 is tediously slow, taking longer to produce a humble 4 x 6-inch print than some took to output a full, borderless A4 photo. Even though the Lexmark took considerable longer to go about its business, the actual image quality is relatively poor.

worst thing about the prints is a problem that the Lexmark shares with some of HP's older models of inkjet printer. Even using Lexmark's own premium quality glossy photo paper, different colours on the print seem to catch the light with varying degrees of reflectivity, giving a distinctly embossed, 3D look to the finished article. In our tests, prints that took ages to output took even longer to dry and, even after an hour or so, were still slightly sticky to the touch.

With Lexmark's customary high running costs (the P915 is the most expensive on ink in the group), slow print speeds and comparatively lacklustre image quality, the P915 is a printer best avoided.

→ PC ANSWERS VERDICT

Ease of use
Features
Performance
Value for money



→ Overall

45%

The P915's slow, lacklustre photo printing is expensive on ink, just to add insult to injury

Clear as mud

Using the P914's full six-ink line-up (four-ink printing is also available by swapping out the Photo cartridge for a black, mono one), the range of colours is pretty good. Colour rendition is also reasonably accurate, although darker colours tended to take on a slightly muddy appearance in some of our test photos. Yet the

Winners and losers

Want to look good on paper? These models will give you the best photo finish

When testing the printers, we used the manufacturers' own ink and photo paper supplies. You can save money with third-party supplies and the results might be acceptable for general-purpose printing. However, for photo output, the chemical reactions of different coloured inks with each, and with the paper, are critical, and we'd always recommend using genuine supplies for top quality.

Our test procedures included printing various test patterns and calibration charts for testing sharpness, tonal range and colour rendition. However, we also tested for 'real-world' photo results, using a selection of images. These 3-Megapixel photos were printed at 4 x 6 inch and full A4 sizes, both borderless, and the results were timed using the 'Best' photo-quality setting for each printer.

Pick a colour

Colour space defines how large the overall range of colours is that the printer can output. Of the eight-ink photo printers on test, HP's method of

adding a grey cartridge to the Photosmart 8450 gave the least noticeable improvement in colour range, although the printer is extremely good for monochrome photo printing. Epson's R800 was more impressive in terms of extended colour range, but the overall photo quality of our test prints was slightly on the dull side.

YOU CAN'T BEAT PLUGGING YOUR DIGITAL CAMERA STRAIGHT INTO YOUR PRINTER AND PRINTING YOUR PHOTOS

Canon's eight-ink iP8500 ruled the roost. As well as its incredible colour range, the iP8500 also produced the best overall photo quality of any printer on test. The only catch is the purchase price, which is high for an A4 printer. However, running costs are reasonable and even though the printer uses eight ink cartridges, the red and green cartridges lasted around eight times as long as the photo cyan and photo magenta ones,

showing the real worth of individually replaceable cartridges.

A bit on the side

For simplicity, you can't beat plugging your digital camera or memory card straight into your printer and printing your photos. Both HPs are especially adept at this, with excellent colour preview panels and a good range of

If you're on a tight budget, the two main contenders are the Epson R200 and the Canon iP4000. The drawback with the R200 is that it's slow and not particularly good for mono text printing, making it more 'dedicated' than you might wish for a photo printer. It's also pricey to run.

The real surprise of the group is the Canon iP4000. In spite of having a paltry five colours of ink in its line-up, the colour rendition is amazingly good. The provision of both dye-based and pigment-based black inks, utilising Canon's ContrastPLUS system, makes for superb photo quality as well as fast, cheap and effective general-purpose printing.

Overall, if you want great photo quality plus fast workaday printing from a single printer, without the bother of changing cartridges, the Canon iP4000 is the model to go for. Alternatively, if you want to use the printer mostly or even exclusively for printing photos, then we'd recommend the Canon iP6000D. This model offers photo quality that's almost as good as the iP8500 but at just half the purchase price. ■

→ FURTHER INFORMATION

	Canon PIXMA iP4000	Canon PIXMA iP6000D	Canon PIXMA iP8500D
Print technology	Bubblejet	Bubblejet	Bubblejet
Maximum res (droplet)	4,800 x 1,200dpi (2.0pl)	4,800 x 1,200dpi (2.0pl)	4,800 x 2,400dpi (2.0pl)
No of inks (carts)	5 inks (5 carts)	6 inks (6 carts)	8 inks (8 carts)
Cartridge costs	Bk £11, Col 4 x £8	Bk £8, Col 5 x £8	Bk £8, Col 7 x £8
Max speed mono (colour)	25ppm (17ppm)	11ppm (9ppm)	17ppm (15ppm)
Tested speed 4 x 6 inch (A4)	1m 07s (3m 05s)	1m 36s (4m 07s)	1m 03s (2m 03s)
Photo ink cost 4 x 6 inch (A4)	27p (£1.08)	29p (£1.16)	30p (£1.20)
Interfaces	USB, Parallel, PictBridge	USB, PictBridge	USB, PictBridge
Card reader (preview screen)	No (no)	Yes (yes)	No (no)
Borderless printing	4 x 6, 5 x 7, A4	4 x 6, 5 x 7, A4	4 x 6, 5 x 7, A4
Rating	93%	89%	87%



PCAnswers

EDITOR'S
CHOICE**Epson Stylus Photo**

Micro piezo

5,760 x 1,440dpi (3.0pl)

6 inks (6 carts)

Bk £9, Col 5 x £9

15ppm (15ppm)

1m 44s (4m 34s)

37p (£1.48)

USB

No (no)

4 x 6, 5 x 7, A4

82%**Epson Stylus Photo**

Micro piezo

5,760 x 1,440dpi (1.5pl)

8 inks (8 carts)

Bk/Col 7 x £12 + £7

17ppm (8ppm)

1m 16s (3m 54s)

42p (£1.68)

USB, FireWire

No (no)

4 x 6, 5 x 7, A4

78%**HP Photosmart 8150**

Thermal inkjet

4,800 x 1,200dpi (5pl)

6 inks (2 carts)

Col £24, Photo £18

26ppm (20ppm)

2m 03s (5m 20s)

31p (£1.24)

USB, PictBridge

Yes (yes)

4 x 6, 5 x 7, Pan, A4

80%**HP Photosmart 8450**

Thermal inkjet

4,800 x 1,200dpi (5pl)

8 inks (3 carts)

Col £24, Ph £18, Gry £18

30ppm (20ppm)

2m 29s (5m 58s)

38p (£1.52)

USB, E/net, PictBridge

Yes (yes)

4 x 6, 5 x 7, Pan, A4

76%**Lexmark P915**

Thermal inkjet

4,800 x 1,200dpi (5pl)

6 inks (2 carts)

Col £16, Photo £18

22ppm (15ppm)

3m 02s (7m 05s)

44p (£1.76)

USB, PictBridge

Yes (yes)

4 x 6, 5 x 7, A4

45%

→ **MANUFACTURER:** ROXIO **PRICE:** £35 **RETAILER'S WEB SITE:** WWW.ROXIO.CO.UK
SYSTEM REQUIREMENTS: PIII 300MHZ, 128MB, FLOPPY DISK DRIVE, WINDOWS 2000, XP
TESTED ON: DELL DIMENSION 4600, 2.6GHZ P4, 512MB MEMORY, WINDOWS XP PRO

Backup MyPC 6

Hard drives can fail, so it makes sense to back up your data. Henry Tucker does just that

Backup MyPC is designed to help you make sure that should a disaster occur, you still have your data in some form, even if your hard drive is dead. Backing up data is in some ways like flossing your teeth. You know you should do it, but it's one of those things that can be a pain to carry out and you tend to avoid it as much as possible. In the past, archiving data was tricky to do and you needed an external drive or a high-capacity tape drive, but thankfully those days are over.

BACKING UP DATA IS LIKE FLOSSING YOUR TEETH. YOU KNOW YOU SHOULD DO IT, BUT IT'S A PAIN TO CARRY OUT

The name *Backup MyPC* may sound familiar to some, and to those people it'll seem a little strange that the program's published by Roxio. This confusion stems from the fact that Sonic bought Roxio last year. Sonic considered that it wasn't well-known enough in the retail market and so adopted the Roxio name when it took on the staff and software last year. The company that was known as Roxio is now Napster and the Roxio brand is now a division of Sonic. OK, that's the history lesson finished with – let's move on to how *Backup MyPC* works.

Step-by-step

If you've never used any back-up software then the problem is always where to start. With *Backup MyPC* it's with the Backup wizard. This is the most basic part of the application, as it walks you through exactly how to transfer your data. The software supports removable media such as recordable CD and DVDs and also enables you to export to a file. By using this method, if you have an external hard drive or a second internal one, then you can export to

these. The software doesn't detect if you have external drives connected, though. It only identifies them in the same way as internal ones.

Within the wizard there are two settings: one where *Backup MyPC* chooses which files to back up and another that enables you to select which ones it includes. Although the first setting is obviously designed to make it easy for first-time users, it doesn't inform you which files it's copying. Furthermore, during this process there's no indication of how large the final file will be. This could be



The opening interface is clear and it's easy to see which part of the program does what

a problem if you don't have enough CDs or DVDs, or a large enough hard disk. Even when you run the back-up process and it's writing to a disc, it doesn't tell you how big the archive will be. It gives you an estimated amount and there's a progress bar, but for the novice this isn't good enough.

Having tried out the basic part of *Backup MyPC*, we then moved on to the Disaster Recovery Preparation tool. Unfortunately, this is limited from the off. Although it better explains what you need, there are several things that might stop you from running the tool. The Disaster Recovery Preparation tool creates a way of restoring your PC, applications and all, should it die for some reason. To do this you'll need your Windows installation disc, several blank floppy disks and media for the optical drive you selected. The software informs you how many floppy disks you need, having analysed your system. This is all well and good as long as you have

a floppy disk drive, something a lot of PCs don't have any more.

Despite being easy to start using and possessing some features that will appeal to the novice user, *Backup MyPC* does fall down on its simplicity. The fact that it doesn't tell you exactly what it's doing and requires you to use floppy disks does it no favours. Although floppies are good for recovering your PC, a lot of newer PCs can be recovered from USB devices, and more worryingly for *Backup MyPC*, don't come with floppy drives anyway.

→ PC ANSWERS VERDICT

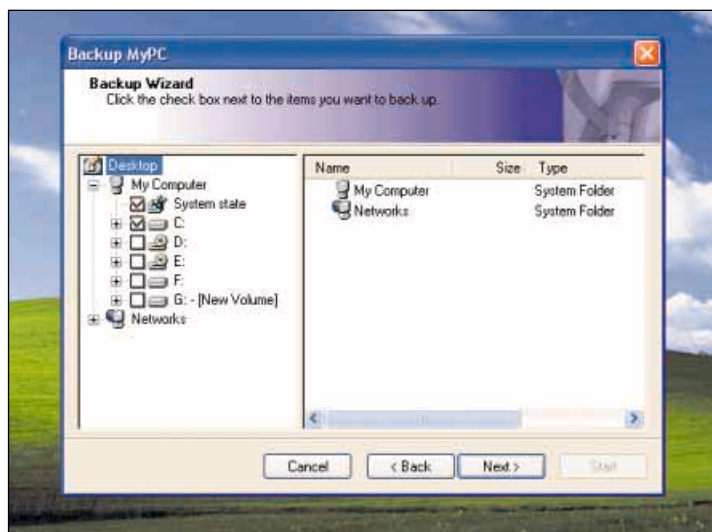
Ease of use
Features
Performance
Value for money



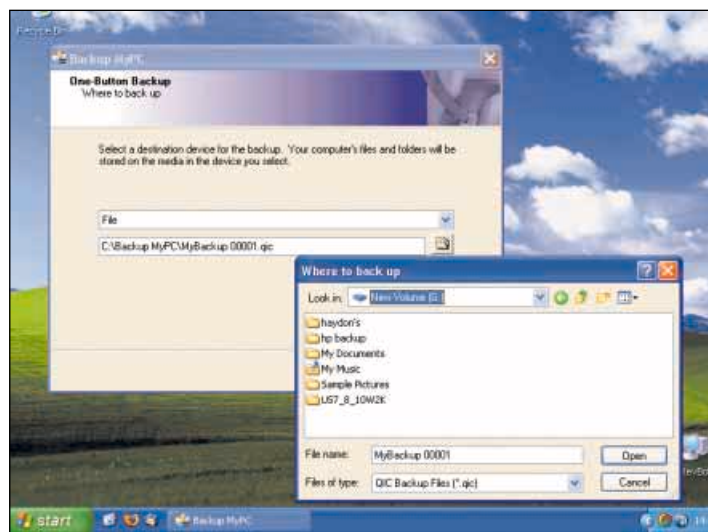
→ Overall

69%

It does have some good features – it's just a shame they weren't implemented better



With the Backup Wizard you can choose which folders you want to archive



To speed up your archiving, Backup MyPC 6 has a one-button back-up feature

→ PUBLISHER: STARDOCK PRICE: \$20 (£11) RETAILER'S WEB SITE: WWW.STARDOCK.COM
 SYSTEM REQUIREMENTS: WINDOWS 98, ME, 2000, XP TESTED ON: DELL DIMENSION 4600,
 2.6GHZ, 512MB OF MEMORY, WINDOWS XP PRO

WindowsBlinds 4.5

Fed up with the same boring Windows look and feel? Henry Tucker gets a makeover by changing his skin

When Microsoft launched Windows XP four years ago, users were given the chance to change the colour scheme within the default settings of the Operating System for the first time. However, if you've been working your way through the various options (blue, green and silver) and fancy a change, try *WindowsBlinds*.

It may sound complicated – changing the way Windows looks – but it isn't when you use *WindowsBlinds*. Once you've installed the software, all you need to do is

down into their constituent parts so you can change the colour, look and size. You can either make changes to themes that you've downloaded or start from scratch with one of your own.

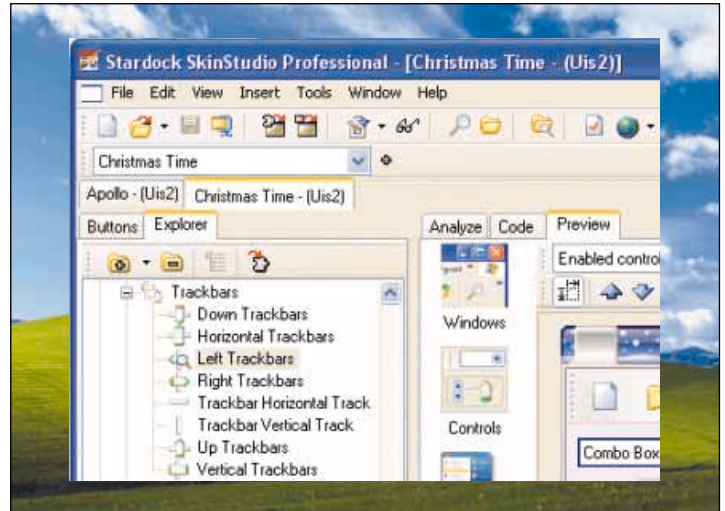
This isn't for the faint-hearted, as you can soon become lost when you start to take a skin apart and play with the colours and various extra buttons that you can add. Before starting, we'd strongly recommend that you read the instructions, as *SkinStudio* is quite unlike any other application we've ever used before.

CONNECT TO THE WEB SITE WHERE YOU'LL FIND HUNDREDS OF SKINS CREATED BY A GROWING COMMUNITY

choose which of the bundled skins you want to switch to. If none of these appeal to you, then you can connect to the *WindowsBlinds* Web site where you'll find hundreds of skins created by the growing community of *WindowsBlinds* fans. This is all very well, but the real fun is to be had making your own skins, rather than using someone else's.

WindowsBlinds 4.5 comes with *SkinStudio*, which enables you to make your own skins. This breaks them

It certainly isn't intuitive and if you go in not knowing what you're doing it can become overwhelming. Furthermore, as *WindowsBlinds* is downloaded, there's no paper manual, and nor is there an electronic one included with the installation file. Consequently, if you haven't used the software before you'll need to go online and download the PDF document on the Stardock Web site. You can print it out if you want, although it's 38 pages long!



With SkinStudio you can make your own theme, although it's not that easy to do

Good performer

The downside of running previous versions of *WindowsBlinds* was that it slowed down the overall performance of your PC. Stardock claims that this is no longer the case with version 4.5. We certainly didn't notice any lag on our test PC. Although *WindowsBlinds* does in effect skin Windows, it runs over the top, which means that it doesn't affect performance.

WindowsBlinds is also a part of a larger collection of tools from Stardock called *Object Desktop*. *Object Desktop* makes it possible for you to change yet more parts of Windows such as icons and cursors, as well as adding extra items to your desktop like clocks and calculators. *Desktop* costs \$50 (£28), but don't confuse it with *WindowsBlinds*, which has reduced functionality, hence the lower price.

In addition to altering the look of toolbars and windows, *WindowsBlinds* also enables you to change the look of some animations. Whenever you

transfer files to your PC you see a little animation showing the files coming in or going out. You can modify these with *WindowsBlinds* so that they look exactly how you want them to.

Although *WindowsBlinds* is good at what it does, its appeal is somewhat limited compared to its parent product *Object Desktop*. For a little more you can buy the full suite with its additional tools. *SkinStudio* is a good application if you can fathom out how to use it, which may take some time and perseverance.

→ PC ANSWERS VERDICT

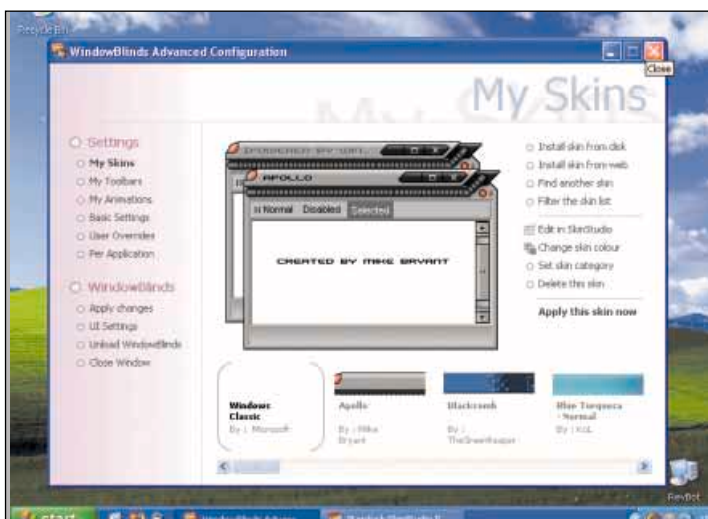
Ease of use
Features
Performance
Value for money



→ Overall

71%

A good way to change how Windows looks, but features are limited



WindowsBlinds comes with a selection of skins and you can download more

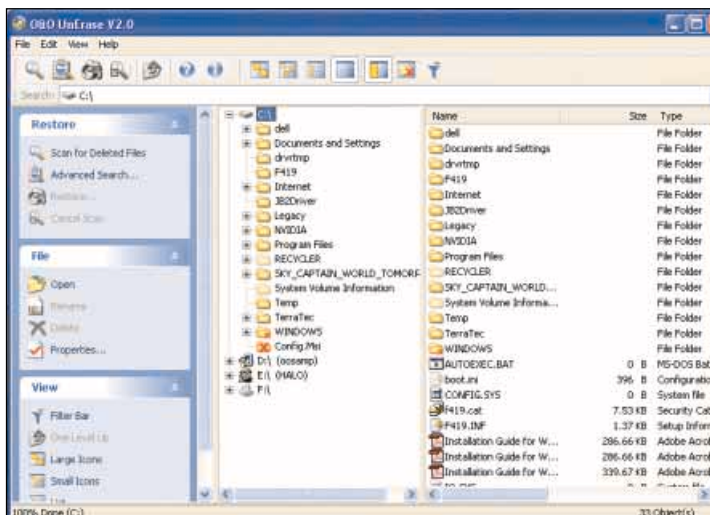


You can easily swap between skins in the Display properties window

→ **MANUFACTURER:** O&O **PRICE:** £31 **RETAILER'S WEB SITE:** WWW.OO-SOFTWARE.COM **SYSTEM REQUIREMENTS:** WINDOWS NT 4.0, 2000, XP, 2003 **TESTED ON:** DELL DIMENSION 4600, 2.6GHZ PENTIUM 4, 512MB MEMORY, WINDOWS XP PRO

O&O UnErase v2.0

If you've ever deleted a file and wished you hadn't, this utility could be the answer



The program's tools are easy to find and use thanks to the interface's Windows Explorer look

Many of us store important information and priceless family photos on our PCs, so making sure that you don't delete the wrong files is essential. However, we aren't all as careful as we could be and it's easy to delete a file. O&O UnErase claims to be able to recover files that you've deleted – whether intentionally or by mistake.

One thing you should know about UnErase is that it can only restore files that you've deleted recently. Overwritten files are lost for good, so don't expect it to be able to find every file that you've ever deleted.

The interface for UnErase looks a lot like Windows Explorer and so will be familiar to most PC users. Its features are therefore easy to access and with one click you can set the program to search for any deleted files. We tested it by creating a folder called 'find this' on the desktop, deleting it and then emptying the Recycle Bin. Unfortunately, the results weren't that impressive.

Having searched the PC, the software marks any folders that have had any files deleted from them by placing a red marker on its icon. Despite knowing where the file had come from, UnErase didn't show a red marker by the desktop icon. We tried it in other folders and it still didn't work.

It did, however, show up with a red marker on the Recycle Bin folder. When we expanded this, there were plenty of icons there, but none of them had proper names. Instead, they had names such as Dc21. Eventually, we found our file and restored it. However, even though the program put the file back, it was still labelled Dc21.

Recovery disk aspect

As well as this support for retrieving recently deleted files, UnErase also has a tool to help you pre-empt future data loss. Basically, it creates a recovery disk of sorts for use in case of a crash.

Although UnErase will recover some of the files you've deleted or lost, it's a long way off being the ultimate file recovery solution and there are plenty more thorough solutions with better features available.

HENRY TUCKER

→ PC ANSWERS VERDICT

Ease of use	●●●●●
Features	●●●●●
Performance	●●●●●
Value for money	●●●●●

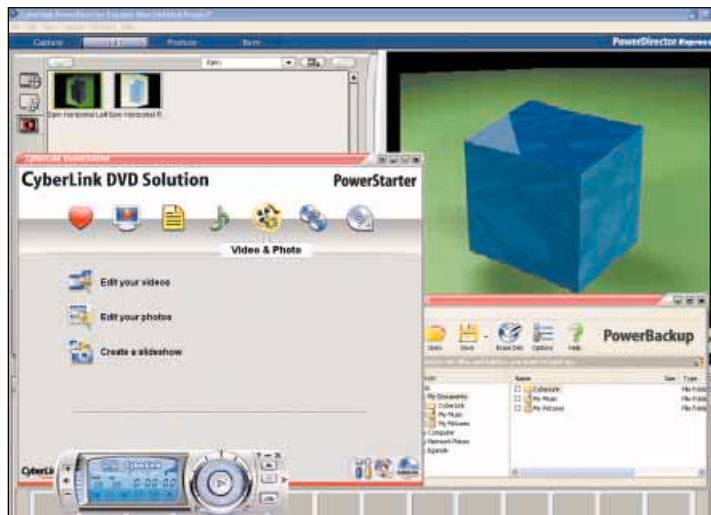
→ Overall

69% This will get some of your files back, just don't expect miracles

→ **MANUFACTURER:** CYBERLINK **PRICE:** £53 (\$99 ONLINE PURCHASE) **RETAILER'S WEB SITE:** WWW.GOCYBERLINK.COM **SYSTEM REQUIREMENTS:** 450MHZ CPU OR FASTER, 128MB RAM (MINIMUM), WINDOWS 98SE OR LATER

DVD Solution 3

Find out why CyberLink's Platinum suite is actually closer to dull aluminium...



A comprehensive suite, but firmly at the bottom end of the features market

If anybody at CyberLink is reading this, can we start with a quick request? The next time you sit down to produce a multimedia suite, remember that we don't all have or want five-mile high Start menus. It's not that we object to a combination of media players and video editors: just that it's very easy to combine them all into one single CyberLink menu, rather than adding eight new options into the root.

While we've got you here, there are a few other little things we'd like to ask about. First, it's OK that most of the apps in this suite are the Express editions of your software rather than the full version, but couldn't you have pointed it out somewhere on the box? When you see the word Platinum, you could be forgiven for thinking that you're actually getting the full... even Platinum versions of each – not cut-down versions that, for instance, only give you half the transitions to use in your video editing work, and no video effects to go over the top.

Let's be honest: DVD is hardly the barrier it once was. If you need to find something that can handle slideshows, basic video editing and menus, you really only have to throw a brick. Adobe Premiere Elements is flattening all pretenders to its throne. True, even the Elements edition is fairly pricey, but it's

still the only genuine contender if you're looking for an affordable video editor that even has a chance of handling anything more professional than stringing clips together.

Know what you're buying

That's the real problem here, CyberLink. Your solution covers all the basics, thanks for the quick photo-editor, and it doesn't matter that PowerDVD is a version out of date if we just want to watch a quick movie. These tools work perfectly well as long as you know that you're getting cheap and cheerful utilities for each aspect of multimedia development. However, with the likes of Adobe and Roxio taking on exactly the same market, the little details matter. Next time, please be clear on exactly what everyone's getting for their money.

RICHARD COBBETT

→ PC ANSWERS VERDICT

Ease of use	●●●●●
Features	●●●●●
Performance	●●●●●
Value for money	●●●●●

→ Overall

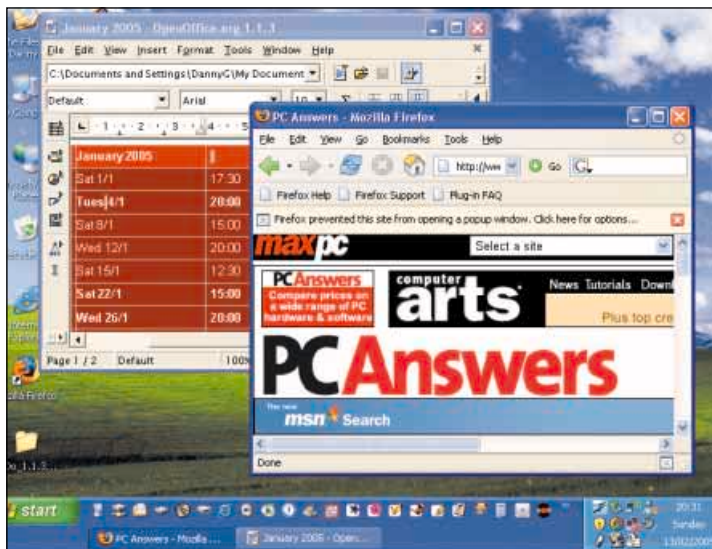
60% It's a competent enough product, but is overshadowed by similarly priced competitors

→ PUBLISHER: PHOENIX GLOBAL SOFTWARE PRICE: £25 RETAILER'S WEB SITE:

WWW.AMAZON.CO.UK SYSTEM REQUIREMENTS: WINDOWS 98/ME/NT/2000/XP, 64MB RAM, 250MB HARD DISK SPACE

OOoFf!

Two open-source giants in a box, but is worth breaking the cellophane for them?



Do you really need to spend £25 on applications you can download for free?

OoFf! – yes, you've read it right – is a boxed combo of two of the biggest open source packages in the world: *OpenOffice.org* and *Firefox*. In case you don't know, *OpenOffice.org* is a free alternative to the *Microsoft Office* suite, while *Firefox* is a free alternative to *Internet Explorer*. This isn't a mistake. Phoenix Global Software is charging £25 for something you can find for free. What's more, Phoenix has done little to add to either package. Inserting the CD in your drive simply means a browser window pops up containing a bit of help text and hyperlinks to the software on the disc.

Don't get us wrong. *OpenOffice.org* is a fantastic alternative to *Microsoft Office*. *Firefox* is possibly the best browser on planet Earth. Here's our dilemma: although the product is giving you something for, er, something, as opposed to nothing, giving *OOoFf!* an extremely poor score wouldn't be fair. You'll be buying two fabulous pieces of software. However, we're scoring the product, not the component parts, and in this case you'll buy a CD containing software you can find for free elsewhere – not least on the cover disc attached to this very magazine. We provide you with a copy of *Firefox* every issue.

Casual, man

Phoenix is catering for the casual shopper that's looking for both of these products in an easily digestible chunk. There'll be a market for it, but we'd suggest you don't tar yourself with that brush. You may be concerned that while we provide *Firefox* on CD, *OpenOffice.org* is 64.3MB in size. If you have broadband, stop reading this now and go and download it. If you're on dial-up, it's different: 64.3MB may seem like a lot of data to download. It's not really. Leave your PC and Internet connection on overnight and it'll cost you a lot less than £25. Then sit back and smirk as your less-aware friends remark on how they've spent their hard-earned cash on something that cost you next to nothing.

DAN GRABHAM

→ PC ANSWERS VERDICT

Ease of use
Features
Performance
Value for money

→ Overall

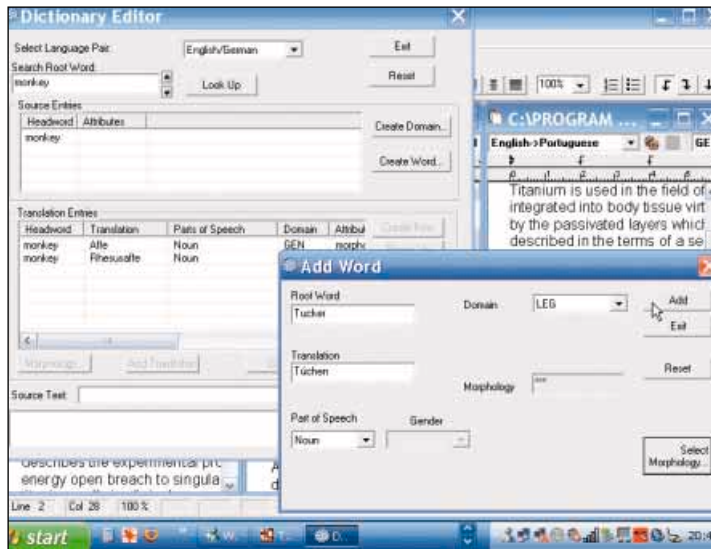
60% Brilliant software that costs too much. Download it instead

→ PUBLISHER: AXELAB PRICE: £48 (€69) RETAILER'S WEB SITE:

WWW.AXELAB.COM SYSTEM REQUIREMENTS: PENTIUM CPU, 32MB RAM, SVGA, 70MB HARD DISK DRIVE

Tr@nslation Plus

Become a cunning linguist with this combined word processor and translation software



Translation software is rarely entirely accurate, so consider your needs before you buy

Translation software is *dix a drachma* and ever since Altavista launched its *Babelfish* service it's been difficult to persuade consumers of its merits. To be clear, why pay for a marginally better piece of software that the Internet could provide for free, especially when the reliability of translation software of any sort is highly dubious?

Tr@nslation Plus contains a word processor (though there's no *Word* or *Excel* plug-in, which was a let-down) and translates between English, German, and the romance languages – French, Spanish, Portuguese and Italian. We tested by using a selection of documents (excerpts from Dickens, and a paper on the semi-conductive properties of titanium, for example), and using the program and its online rivals to translate and then retranslate what it had produced.

Toddler talk

Even compared to *Babelfish*, *Tr@nslation* is slow, though both only take a few seconds. Translating normal text produces something as close to English as the burlings of a toddler. Furthermore, as soon as you move away from very basic verbs or nouns, the program runs into trouble. Yet, the accuracy is a lot greater than its

online/free competitors, and it can handle more than their 150-character limits, which can prove useful. Testing a technical document produced better results. Perhaps because of the clearer language employed in scientific documents, the translation was more accurate and the text was fairly comprehensible. That said, *Babelfish* and Systran's services also translated the text with a good level of accuracy.

In the final analysis, these programs are near-useless for someone who doesn't speak the language. To some extent, they can be used for eliciting basic information from documents. However, they're so unreliable that we can't recommend them for the foreseeable future as standalone translation tools for the layperson.

DAN GRILIPOLOUS

→ PC ANSWERS VERDICT

Ease of use
Features
Performance
Value for money

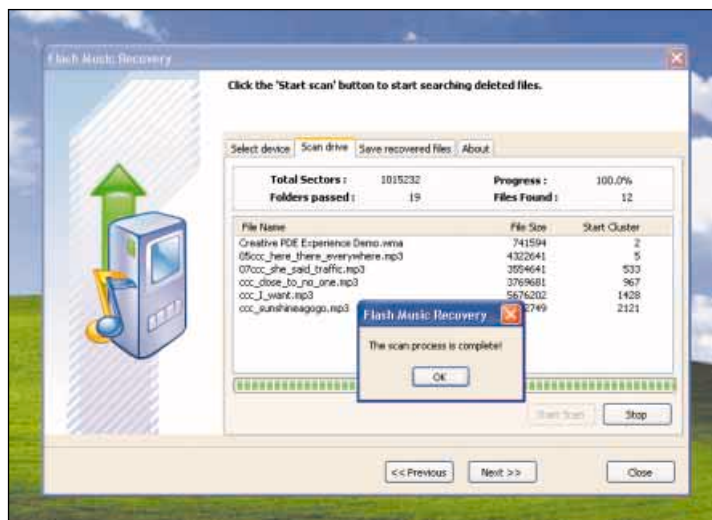
→ Overall

65% Passable translation software that does nothing special

→ PUBLISHER: PANTERASOFT PRICE: \$40 (APPROX £25) RETAILER'S WEB SITE: WWW.PANTERASOFT.COM SYSTEM REQUIREMENTS: 300MHZ CPU OR ABOVE, 128MB RAM, 2MB HARD DRIVE SPACE

Flash Music Recovery

Death is not the end of life's great adventure... especially if you're an MP3



The scan process is complete... but has the program recovered all your music?

Of course, if all your music is legally obtained and you have the original CDs for every single track on your MP3 player, then you really don't need this software. However, we'll tell you all about it anyway, just in case you mysteriously can't find the originals of a few songs you've accidentally deleted.

Flash Music Recovery is one of those programs whose title leaves little room for misunderstanding. Nevertheless, we were determined to be completely bloody minded and ascertain whether it could recover deleted or lost tracks from hard drive-based as well as solid-state MP3 players. Unfortunately it couldn't, so the contents of our 20GB iPod have been lost forever. On the likes of a Creative MuVo, a flash card or indeed any solid-state device that's allocated a drive letter in Windows, Flash Music Recovery is quite the miracle weaver, however. Tracks from months ago we don't even remember owning were located and retrieved, all at an impressively quick rate. The interface is ludicrously simple: select the drive letter you want to search, then let your face go blank and keep clicking 'next' until you see a list of files.

Hide and seek

The program also displays the number of total deleted files it's found, but will only show you and enable you to recover music files, not documents, images, programs or whatever else was on your flash drive – and not B-list music formats such as OGG either. Essentially, the program's telling you, 'Yeah, I know exactly where all that stuff you lost is. But I'm not going to tell you, oh no.' Another niggle is that, after a few uses, the program stopped detecting deleted files we hadn't got round to recovering yet. Flash Music Recovery, then, is a very specific program: only certain types of storage, only certain types of file, and only, apparently, when it's in the right mood.

ALEC MEER

→ PC ANSWERS VERDICT

Ease of use	●●●●●
Features	●●●●●
Performance	●●●●●
Value for money	●●●●●

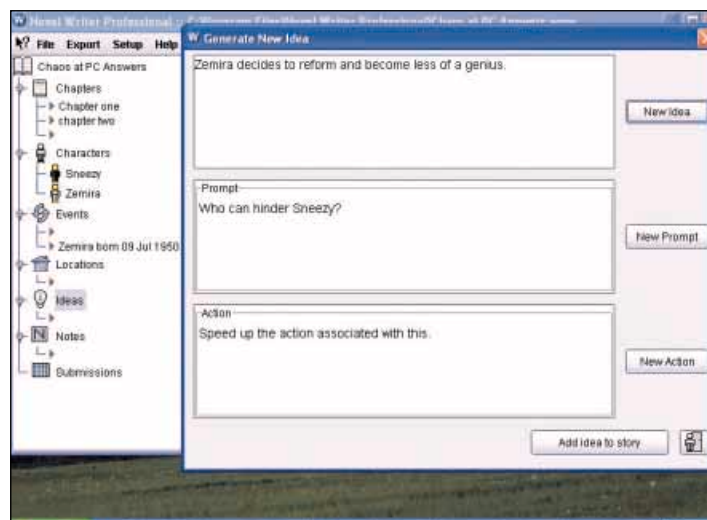
→ Overall

68% What it does it largely does well, but needs to widen its scope to be truly essential

→ PUBLISHER: GLOBAL SOFTWARE PUBLISHING LTD PRICE: £30 RETAILER'S WEB SITE: HTTP://GSP.FS-SERVER.COM/ SYSTEM REQUIREMENTS: WINDOWS 98/ME/2000/XP, PENTIUM PROCESSOR 400MHZ, 128MB RAM, 100MB HARD DISK SPACE

Write Your Own Novel: Pro Edition

Could this software be the key to unleashing your novel-writing genius?



The idea creation tool probably won't think up a bestseller for you

According to the box, Write Your Own Novel: Professional Edition offers everything you need to create a masterpiece – apart from the actual words. You'll be able to create story outlines, generate characters and ideas, track novel events, jot down notes, format your manuscript and track submissions. However, the lack of a printed manual (it's on the CD) or a tutorial on startup can prove frustrating, although there's an introduction in the help contents.

The generation game

The idea creation tool is bizarre. It suggested novel ideas that varied from the mundane (characters arguing about a fishing rod) to the truly weird (someone tries to destroy Scotland). The title and character generators are little better, but in contrast the name generator is more useful. You can dictate your character's nationality and it'll suggest appropriate names. However, baby name books and Web sites are just as easy to use and a lot cheaper.

This is the case with many of the software's tools: there are often alternatives that do a better job. Jotting down story notes within the

application may be useful, but you can do that anywhere: in Word, in OpenOffice.org, on a piece of paper. Similarly, you can write a whole book within Write Your Own Novel if you want, but it's much easier to use a proper word processor.

The timeline tool is the most valuable, as it helps create an overview of your novel. The submission tracker is another nifty utility, as it's easy to see where you've submitted to, and how long it's been there.

If you want to write, a word processor or text editor is really all you need. While writing software can be helpful, its main function is often that of a procrastination tool. It can't write a novel for you, after all.

HELEN FRENCH

→ PC ANSWERS VERDICT

Ease of use	●●●●●
Features	●●●●●
Performance	●●●●●
Value for money	●●●●●

→ Overall

40% Use your current word processor instead of buying software you don't need

→ **MANUFACTURER:** TOSHIBA **PRICE:** £899 **RETAILER'S WEB SITE:** WWW.LAPTOPSDIRECT.CO.UK
FEATURES: CENTRINO, PENTIUM-M 1.6GHZ, 256MB OF MEMORY, 12.1-INCH DISPLAY, 802.11G WIRELESS, CD-RW DVD-ROM COMBO DRIVE, WEIGHT 2KG

Toshiba Portégé A200

Feel that you've seen this laptop somewhere before? Henry Tucker delves deeper to find out more about the A200

Love or loathe Apple, its influence is all around us in the PC market. It's not just the sheer dominance of the iPod that we're talking about. PCs and laptops are really starting to look nice at last.

We've had black laptops for some time, but it was Apple that pioneered smooth styling as seen here from Toshiba. Laptops are now a fashion statement. You want yours to look good when you get it out on the train, even if all you do is play Minesweeper or Solitaire.

Of course, many people say that super-styled technology products – of which the Portégé A200 is certainly one – are merely concept over quality. After all, the majority of swish-laptop owners only use them for email, Internet and watching DVDs on the go, while trying to look cool. However, from spending some time with the A200, we feel that not only does it look good, but it has plenty inside it, too.

Not just a pretty face

There's been a major trend over the past two years or so to make laptops as powerful as possible by packing them full of features such as desktop processors, dedicated graphics sub-systems and whopping great widescreen displays. Consequently, it's nice to see a laptop you can actually carry. The A200 is the perfect size to take with you when you travel. Being small, it's also nice and lightweight,

long – unless you're a competitor in the World's Strongest Man competition, that is.

The A200 is rather diminutive in stature, but don't let that make you think it doesn't have what you need for 21st century computing. The 1.6GHz Pentium-M chip provides more power than you'd think and will cope with the Internet, email, word processing and other tools without leaving you staring at the egg timer all day. The plus side of it being Centrino, of course, is that it's designed from the inside to be used on the

move. This means good portable performance and a healthy battery life as well.

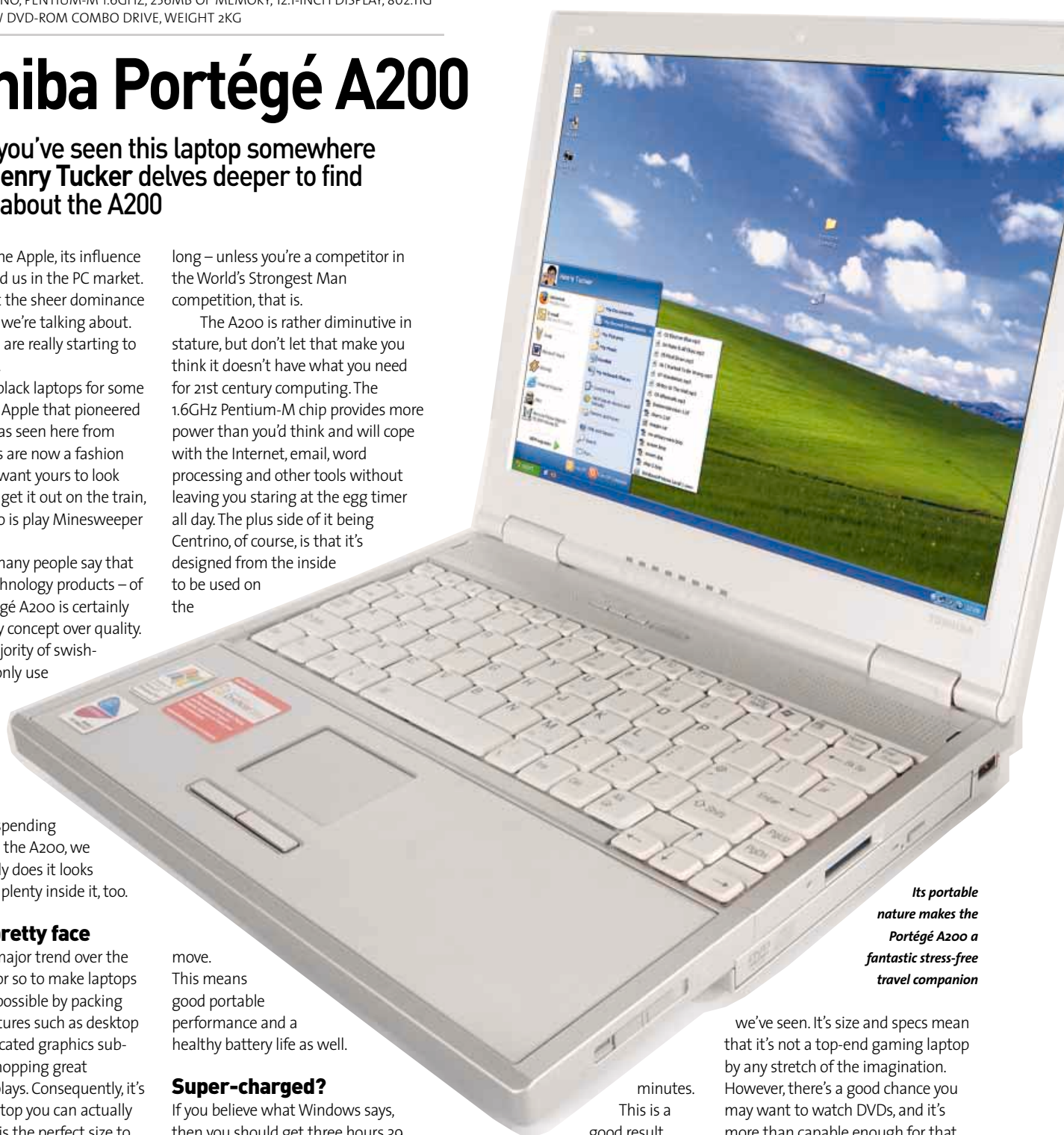
Super-charged?

If you believe what Windows says, then you should get three hours 39 minutes continuous use from the A200 before you need to recharge. As

good as this sounds, we're loathe to trust Windows completely. So we tested it using *MobileMark 2002* and achieved a time of three hours 21

IF YOU BELIEVE WHAT WINDOWS SAYS,
YOU SHOULD GET THREE HOURS 39
MINUTES USE BEFORE RECHARGING

and you can comfortably hold it in one hand and operate the trackpad with the other. However, it's not so light that you would want to do this for



Its portable nature makes the Portégé A200 a fantastic stress-free travel companion

we've seen. It's size and specs mean that it's not a top-end gaming laptop by any stretch of the imagination. However, there's a good chance you may want to watch DVDs, and it's more than capable enough for that.

minutes. This is a good result considering that all the power-saving tools have to be turned off in order to run *MobileMark*.

Not everyone will appreciate the size of the screen – it's not very big. This, naturally, is the price you pay for the A200 being small. Of all a laptop's components, it's the screen that governs the size of the chassis more than any other. In any case, the 12.1-inch display is great and certainly a lot clearer than many larger displays

→ PC ANSWERS VERDICT

Ease of use
Features
Performance
Value for money



→ Overall

88%

It may not be big, but it's perfectly formed and ideal for use on the move

→ **MANUFACTURER:** ELONEX **PRICE:** £2,299 **RETAILER'S WEB SITE:** WWW.ELONEX.CO.UK

FEATURES: PENTIUM 4 3GHZ, 256MB OF MEMORY, WINDOWS XP MEDIA CENTER EDITION, 32-INCH DISPLAY

Elonex Lumina

Henry Tucker checks out one of the largest Media Center PCs on the market. Several DVDs and music CDs later, he delivers his verdict

Media Center PCs are still seen as something of a niche product. One reason is that most of these lounge-orientated devices look like standard PCs, complete with bog-standard components such as 17-inch flatscreens. The Elonex Lumina certainly goes against this line of thinking: in all its 32-inch brilliance it's got 'must-have' written all over it.

When the topic of PC-based living room entertainment is raised in the office, this is the sort of thing that we have in mind. Unlike almost all other MCE PCs currently available, you don't have to be sat right in front of the Lumina to see what's going on. In fact, you need to be at least two metres away from the Lumina or it makes your eyes hurt – it's that big.

The question we have to ask is this: is the Lumina any good? It certainly looks the part and the screen image is very impressive. Although it isn't the most crisp picture that we've seen – the resolution is a little low at 1,366 x 768 – it still

To save you even more space, the Lumina can also be wall mounted

nauseous through lurching motion sickness. So, demanding games can be played on the Lumina, but you'd need a proper mouse to get a smoother response.

It's clear that the Lumina was designed to watch movies on, and the 32-inch display was destined to play films

BECAUSE THE SCREEN IS SO LARGE, YOU NEED A WAY OF CONTROLLING THE WINDOWS ASPECT FROM A DISTANCE

provides great visuals. Because the screen is so large, you need a way of controlling the Windows aspect from a distance. Many MCE PCs are supplied with a wireless keyboard and a mouse, but the Lumina has a much better solution: a wireless keyboard with mouse functionality built in. This works well for general tasks such as opening files and the like, but you won't want to use it to play games. We tried it with a first-person shooter, *Far Cry*, and although it's possible to play the game it did make us feel

such as *Star Wars* and *The Lord of the Rings*. As the screen has a full PC built into it, this conveniently includes a DVD-RAM drive, so you don't even need to link it up to your DVD player.

Do you always want to look a Windows XP interface, though? If you just want to watch TV, isn't it easier to simply turn on the TV without having to wait for your PC to boot? With the Lumina, you can use it as a standard TV as well. It even comes with a second remote control to add to your AV collection.



Of course, the basis of the Lumina is its PC functionality. The spec might not be the best we've ever seen, and for the price it's a little limited, but it's ideal for use as a Media Center system. You have all the associated functionality and you also have built-in 11g wireless and better still, RCA phono connectors so that you can link the device to your sound system.

Apart from the screen, the best thing about the Lumina is that it's totally silent. This is exactly what you need if you're going to have a PC in your living room. Even when it boots you can only just hear the hard disk initialising if you are stood right next to it.

In terms of Windows XP Media Center PCs, the Lumina is surely the

way forward. Granted, it costs well over £2,000 but don't forget that it's an impressive 32-inch LCD TV, too. We think you should ignore any other MCE PC and save your pennies (and maybe your pounds, as well) for this. Then invite your friends round and watch as their jaws hit the floor.

→ PC ANSWERS VERDICT

Ease of use
Features
Performance
Value for money



→ Overall

86%

The way all good Media Center PCs should be: big and impressive

→ **MANUFACTURER:** SHUTTLE **PRICE:** £265

RETAILER'S WEB SITE: WWW.OVERCLOCKERS.CO.UK

FEATURES: AMD64 939, NFORCE 4, PCI-EXPRESS, GIGABIT LAN, 8-IN-1 CARD READER, SATA

Shuttle XPC SN25P

Shuttle has once again pushed the boundaries of small-form factor PCs. Henry Tucker checks out the company's latest mini-marvel

When Shuttle launched its first small PC around four years ago, it started a trend towards compact computing that many welcomed with open arms, even though the first wave of systems were somewhat underpowered. Thankfully, that's no longer the, ahem, case: showing off the latest nVidia nForce4 chipset and PCI-Express, the SN25P is Shuttle's most advanced barebones system yet.

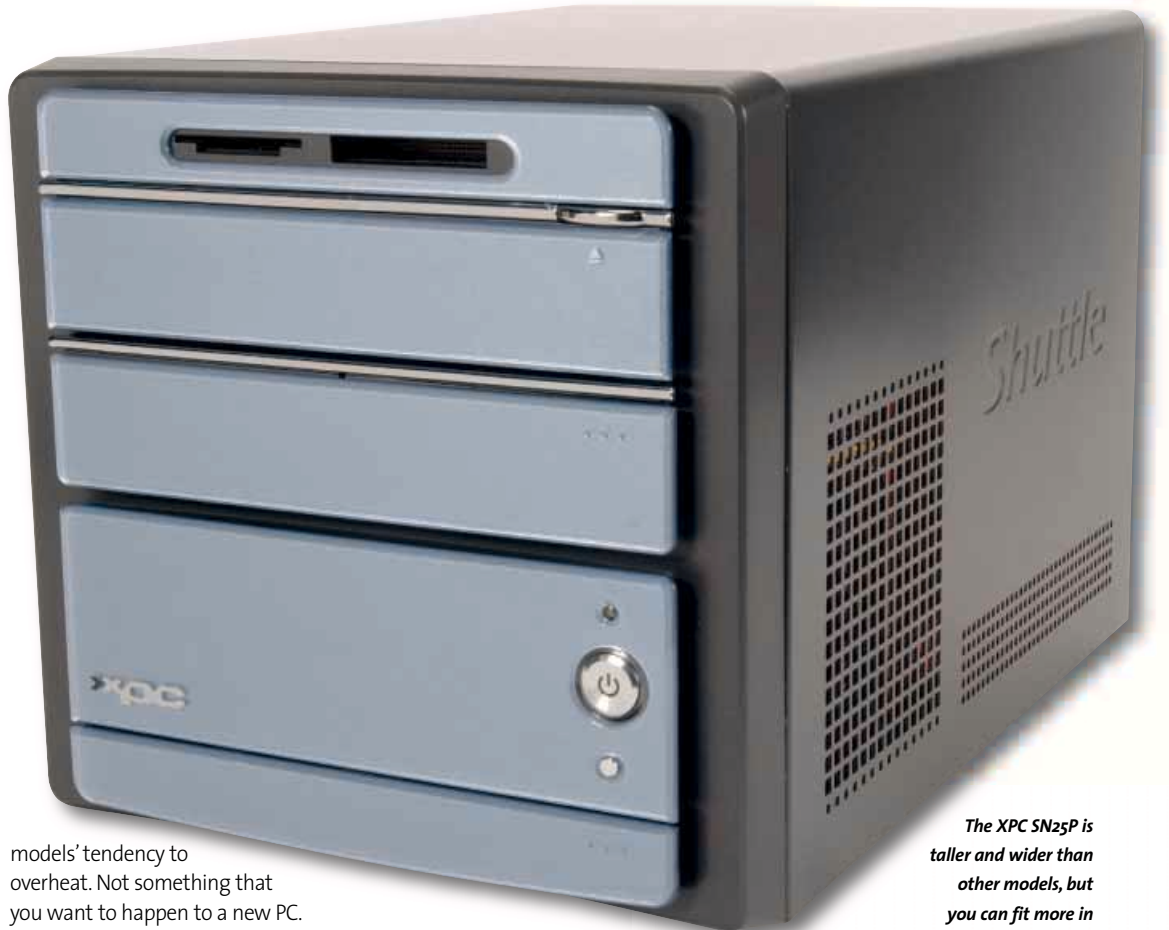
However, what really catches our attention are the striking changes that have been made to the design of the chassis and its internal workings. The SN25P is larger than previous models in the XPC range. It's a little higher and wider, for reasons that will become apparent.

Fan-tastic

The XPC system uses what Shuttle calls its ICE heat-pipe system. Here, the CPU cooler is cooled passively with metal pipes running off to a radiator that's fitted with a fan. Shuttle has modified this to cope with the extra heat of the latest 939 AMD Athlon64 and FX chips. The ICE pipe now has a fan next to it and some plastic ducting to take the heat out of the case to one side. This is in addition to another fan on the other side of the case. Then, instead of just the one fan at the back, the SN25P now has three fans. One of these is quite big, measuring 10cm, and the other two are smaller at 8cm.

IF YOU'VE EVER LOOKED INSIDE A SHUTTLE YOU MAY WONDER WHERE THESE EXTRA DRIVES WILL GO

The increased amount of active cooling made us wonder just how noisy the XPC would be. Granted, it isn't silent, but it didn't make as much noise as we'd feared. The additional fans should address the previous



The XPC SN25P is taller and wider than other models, but you can fit more in

models' tendency to overheat. Not something that you want to happen to a new PC.

The SN25P features support for multiple hard disk drives. You can have as many as three SATA drives if you don't install a floppy drive. Many of you may query why you would need a floppy in the first place. The answer is that you need to have some sort of floppy drive attached so that you can

on earth these extra drives will go. Well, as the SN25P is quite a bit taller than previous models, the drives actually go above the optical drive. They sit side by side with the connectors neatly routed down through the side of the chassis. You don't have to use SATA drives though; one IDE drive can be installed instead.

Finishing off

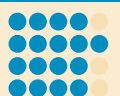
The SN25P is nicely finished and you get all the bits and bobs you need to assemble. The optical drive sits on tool free rails, as do the floppy and hard drives. The only complaint we have with the construction concerns the CPU cooler. The screws that hold it in place have springs on them to maintain tension. This makes them

tricky to screw in, and the amount of pressure you have to apply does make the motherboard flex rather a lot.

When everything is taken into consideration, however, we're very impressed with the XPC SN25P. If the AMD64 supported DDR2 then it would be nearing perfection.

→ PC ANSWERS VERDICT

Ease of use
Features
Performance
Value for money



→ Overall

87%

It may be a little more expensive but you get cracking features for your money



→ **MANUFACTURER:** CHANNEL'S COMMUNICATIONS **PRICE:** £35 **RETAILER'S WEB SITE:** WWW.CHANNELS-COMMS.CO.UK **SYSTEM REQUIREMENTS:** DIAL-UP MODEM
FEATURES: BLOCKS NON-AUTHORISED CALLS FROM YOUR MODEM

Modem Hi-jack Alarm/Blocker

Worried about being diverted to premium-rate numbers? We test your potential saviour

It's a brilliant concept. One of today's most worrying Internet threats is the spectre of rogue diallers: malicious programs or Web sites that silently disconnect you from your ISP before reconnecting you through a premium-rate phone line. The first you know of it is when your phone bill comes in at far more than you expect.

The Modem Hi-jack Alarm/Blocker, or MG101B, is a small black box that sits between your modem and the phone line. When you first plug it in and dial up to the Internet, it'll store your number and refuse to let you connect through any other. If a rogue dialler attempts to switch you to another number, it'll be blocked, while a siren and flashing blue light will alert you to your narrow escape.

How it works

Unplug your modem cable from the phone socket and plug it into the MG101B, then connect the MG101B to the phone, with its built-in cable. Now press and hold the small black button on the front of the box for around three seconds – you should hear a small beep and the blue light should flash once. Repeat this procedure if you switch ISP or choose to connect through a different number.

Next, dial up your ISP – this is a key stage in the process because whichever number you dial now will be considered your authorised one. The MG101B has no means of knowing if it's correct, so we recommend dialling via the Network Connections or Dial-up Networking folder to make sure.

Once you're connected, the beep and blue light should make themselves known again. You're now able to surf the Net in complete safety. That's the theory, and that's the practice. It spotted our manual attempt to dial another number and blocked a rogue site's attempt at hijacking the phone connection. If you're paranoid about rogue diallers, it's well worth a look, albeit an expensive one.

NICK PEERS

→ PC ANSWERS VERDICT

Ease of use
Features
Performance
Value for money

→ Overall

80% Does what it says on the box – but it's slightly overpriced



→ **MANUFACTURER:** AVERMEDIA **PRICE:** £30 **RETAILER'S WEB SITE:** WWW.MEDIAATLANTIC.COM **FEATURES:** 16 CHANNEL PREVIEW, RECORDING SCHEDULER, PARENTAL CONTROL, FULL FUNCTION REMOTE CONTROL

AverMedia AverTV GO 007 FM Plus

Turn your TV into a PVR without spending a load of money on it

With the launch of Windows Media Center, and the growing interest in TV on your PC, running your computer as a PVR (personal video recorder) is all the more possible and interesting now. Being something of a niche, it's also perceived as being expensive. It needn't be. The AverTV GO 007 FM Plus is one of the cheapest TV cards that we've seen, but it's not running low on features.

Simple to install, we found the AverTV detected four of the five terrestrial channels. As we tested it in Bath, which as you may or may not know is surrounded by hills, we couldn't get Channel Five. It managed to pick up the other four channels though, and picture quality was as good as you would expect from an analogue receiver. That's the only major disappointment with the AverTV: it isn't digital. Yet the TV card wouldn't be as cheap if it was.

What did impress us, however, is that it's really easy to pause any live TV show that you're watching. With a lot of similar cards, you need to go into the settings first and configure this feature in order to do it. With the AverTV you just press Pause and away you go.

Hit the record button

You can also record programmes as if your PC was a VCR. You can record in MPEG1, 2 and 4 and a DivX player is included as part of the installation, in case you don't have any way of playing your files. The AverTV only has one receiver though, so you can't watch one programme and record another. Another thing that it lacks is an EPG (Electronic Programme Guide). These are always handy to have and in some cases they can be used in conjunction with scheduled recordings as well.

All things taken into consideration, if you're looking for a TV card that won't break the bank then the AverTV is definitely worth a look, despite its failings.

HENRY TUCKER

→ PC ANSWERS VERDICT

Ease of use
Features
Performance
Value for money

→ Overall

77% It doesn't cost much, but you may want to think carefully before you buy it



→ **MANUFACTURER:** KYOCERA **PRICE:** £143 **RETAILER'S WEB SITE:** WWW.KYOCERAMIT.CO.UK
FEATURES: 16PPM, USB CONNECTION, 600DPI, 250 SHEET CAPACITY

Kyocera FS-720

Produce a lot of black and white documents? Then consider buying a monochrome laser printer

Previously, laser printers have been out of reach for the majority of users, as they've been expensive to buy and come with high running costs. However, this is becoming the exception rather than the norm: the price of monochrome laser printers has dropped considerably and they're now suitable for regular use in the home.

One of the latest examples is the FS-720 from Kyocera. It's relatively cheap and the toner offers great value for money if you usually print in black and white. A replacement, high-yield toner costs £52 and will print around 6,000 pages according to Kyocera. This works out at around 0.9p per page.

The other reason home users usually avoid laser printers is because of their size. Again, progress means that they've become smaller and the FS-720 is certainly compact. Although it's bigger than most inkjet printers, much of its height is down to the paper tray. Yet because the paper doesn't stick out you can put it in a corner and leave it to do its job. Sadly, there's no Ethernet port so you'd need a long USB cable to connect it to a PC.

Design statement

Laser printers are often regarded as dull office products, so in an attempt to change people's perception Kyocera has employed the design team at FA

Porsche to produce its new range of printers, including the FS-720. Kyocera has made a big deal of this, but to be honest the FS-720 and the others in the range don't look all that different from other printers. Granted, it has a two-tone colour scheme and a curved casing, but apart from that it isn't quite as revolutionary as Kyocera would have us believe.

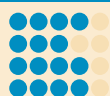
All this is of course window-dressing: you're probably thinking why have this and not a colour inkjet? Well, the benefit with laser printers is not only speed but the quality. If you print a lot of documents you'll notice the difference with the FS-720.

The FS-720 certainly offers good value for money and its print quality is much better than many inkjets. If you print a lot of black and white documents then it's a good solution.

HENRY TUCKER

→ PC ANSWERS VERDICT

Ease of use
Features
Performance
Value for money



→ Overall

87%

If you want to save money on your printing, this offers good value for money



→ **MANUFACTURER:** IMATION **PRICE:** £90 INC VAT **RETAILER'S WEB SITE:** WWW.DABS.COM
FEATURES: USB CONNECTION, STORAGE SPACE FOR 100 CDS OR DVDS

Disc Stakka

Is it a jukebox that can't play your CDs, or a CD case the size of a small TV? You decide

Here's the pitch: 100 CDs or DVDs take up a lot of space, and if they're data discs it's troublesome to keep track of what's on each. Enter Disc Stakka. Place a disc of any provenance into it, and it's catalogued and stored for easy retrieval in moments. Simplicity itself, or so it seems...

When you insert a disc, the program asks you if it's a disc it has received before or a new one. A new one is added to the database, and you can add notes on its content, origin and so on. When you want to retrieve a disc, you can open up a low-memory database that sits in the notification tray, enter a search or select your disc, and it pops right back out again.

Stacked odds

We had one small problem when the first disc into the machine became stuck. Though the machine righted itself and continued to accept and dispense other discs, this disc was irretrievable without dismantling the unit. Not a good start.

In addition, the discs are only recognised by user entry, not by reading them, so human database error becomes a threat. Moreover, an alphabetised CD rack and a notepad could perform the same role adequately and that doesn't suffer

from the problem of what to do with 100 empty cases.

Yet the Stakka's major flaw is that it's designed to be stacked up in multiple units (a single USB port can power five Stakkas. In theory, you can connect over 100 stacks to your PC, enabling you to store 50,000 discs.) This choice means there's no ability to access the discs while they are in the machines, as the cost of including a CD/DVD reader in each Stakka would be prohibitive. Hence you still have to transfer them to your CD drive, which feels a little strange.

If you have large numbers of case-less discs and want to catalogue them for easy access, the Disc Stakka is the ideal, if expensive, tool. If you only have a small collection of music, movies and game discs, it'd be cheaper to sort them out yourself.

DAN GRILIOPOULOS

→ PC ANSWERS VERDICT

Ease of use
Features
Performance
Value for money



→ Overall

70%

A handy but expensive cataloguing tool that has limited use

Enter online at www.pcanswers.co.uk/competition

WIN IT TO PRINT IT

**FIND OUT
MORE AT**
www.epson.co.uk

Get your hands on EPSON's stunning all-in-one photo printer and scanner



Being able to print top-quality photos at home is the want of many a PC user. The EPSON Photo Stylus RX420 enables you to do just that. It's an all-in-one printer, scanner and copier that has an optimised dpi of 5,760 x 1,440, a 15ppm print speed and a 12cpm copy speed.

The scanner has a resolution of 2,400dpi and the printer has four separate colour cartridges. Not only do you get top-quality images at home, but it won't break the bank either. With the EPSON Photo Pack you get all the ink and paper to be able to print 100 of your pictures. This works out much

cheaper than current high-street options. You don't even need to have a PC to print with it either as the device has a built-in 7-in-1 memory card reader, enabling you to print straight from your camera's memory card.

As well as being able to print your new pictures it also comes with

software to help you restore any old and faded pictures you have.

Thanks to the people at EPSON (www.epson.co.uk) we've got three EPSON Photo Stylus RX420s up for grabs. To stand a chance of winning one of these, simply correctly answer the question below.

→ ANSWER THIS QUESTION CORRECTLY FOR A CHANCE TO WIN

How many separate ink cartridges does the EPSON Photo Stylus RX420 utilise?

- A One**
- B Four**
- C Three**

You can enter at our Web site: www.pcanswers.co.uk/competition. Alternatively, write your name on a postcard, add your name, email address and a daytime telephone number, and send it to:

EPSON competition, PC Answers, Future Publishing, 30 Monmouth Street, Bath BA1 2BW. Entries must reach us before 20th May, 2005. The winners will be listed in issue 148, which goes on sale 30th June, 2005.

→ HAVE YOU WON?

**Issue 142
Dell Latitude
Notebook**

**Mr D Andreae
Solihull**

COMPETITION RULES 1. Employees of Future Publishing and all companies involved in this competition, or their families and agents, may not enter. 2. No purchase required in order to enter this competition. 3. Only one entry per household. Multiple entries will be disqualified. 4. Entries must be sent by email, on a postcard, or on the back of a sealed envelope. Oversized entry forms or entries sent without a name or address will be disqualified. 5. Entries received after the closing date will be disqualified. 6. The editor's decision is final and no correspondence will be entered into over the results. No cash alternative is available for any prizes. PCAnswers reserves the right to substitute a prize for one of equal or greater value. 7. The closing date for entries is 20th May, 2005. 8. Results are in issue 148, which goes on sale 30th June, 2005. 9. Please state if you don't want to receive details of any further offers from Future Publishing and its associates as a result of this competition. 10. All details and rules are subject to change without notice. 11. All correct and valid entries will be entered into the prize draw and winners will be picked after the closing date. 12. This competition is only open to UK residents. 13. If the prize is not available we reserve the right to replace it with one of equal value.

support

HARDWARE HELPDESK

- How to scan slides
- Installing hard drives
- Finding low-profile PCI cards
- Poor graphics resolution

**STARTS ON
PAGE 120**



'I'm having problems connecting my camera to my PC and downloading images'



NICK PEERS
Support specialist

NICK'S TIP OF THE MONTH

The Windows key on your keyboard does more than just open the Programs menu. Trying pressing it and [R] for Run, with [F] for Find and with [Pause] to open the properties of My Computer.

→ SECTION CONTENTS



ASK THE EXPERTS

If you have a problem and no one else can help, then you need to call in the PCAnswers team of experts. They return again with solutions for you

PAGE 108

- 5-minute guide **P116**
Find and remove Trojans
- The Clinic **P118**
Curing one sick laptop
- Network **P130**
How to use network tools
- Patches & updates **P135**
Keep Windows up-to-date

HOW IT WORKS ADSL

P128



YOUR QUESTIONS ANSWERED

ASK THE EXPERTS

→ CONTACT

SEND YOUR QUESTIONS TO:

PCA.EXPERTS@FUTURENET.CO.UK

OR BY POST:

ASK THE EXPERTS, PC ANSWERS,
FUTURE PUBLISHING, 30 MONMOUTH
STREET, BATH BA1 2BW

→ THE EXPERTS

NICK VEITCH
securityNICK PEERS
windowsGRAHAM BARLOW
internetSIMON PICKSTOCK
applications

Personal computing is never the smoothest of rides – our experts provide the virtual shock absorbers

Where's the radio dial?



Q When I had *Windows Media Player 9* installed I could listen to radio stations from across the world, for free. Since updating to *WMP10* this function appears to have disappeared and 'pay to hear' replaced it. How can I set up *WMP10*

to listen to the free radio stations?
Pete Nichols

A The free radio stations are now available in the Guide section of *Media Player*. Switch to the Guide tab in *Media Player* – the first time it's accessed you'll see a welcome screen. Switch back to Library and then select Guide again. You should now be able to access your favourite radio stations by

clicking the Radio link at the top of the screen.

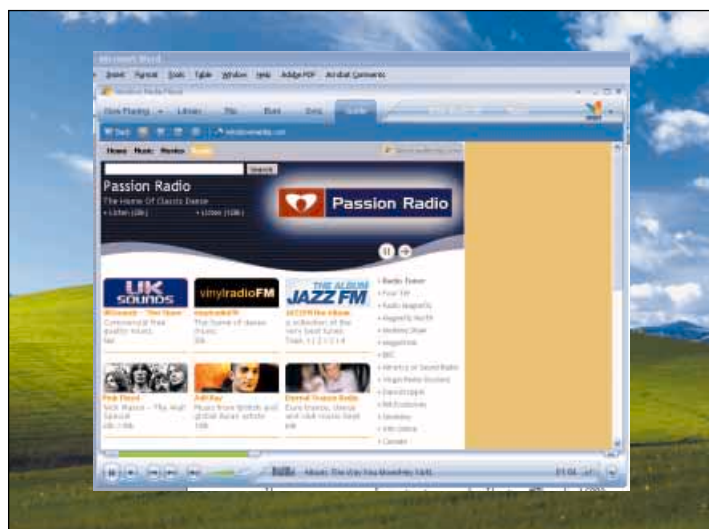
Scrolling headers in Word



Q When using a table in *Word*, I often use the split window facility (*Window -> Split*). Using the 'portrait' page set up it's easy to scroll up or down the screen while keeping the table header visible.

However, when using a 'landscape' page setup it's necessary to scroll from side to side to view the left- or right-hand sides of the page. When doing so, the table header remains stationary (and visible) and doesn't follow the active window being scrolled. Many of my pages are long and contain many values. It's thus difficult and time-consuming to ensure additions or changes to a table are actually in their correct columns. How can I lock the active window being used and the table header so that when scrolled from side to side, both move together?

Terry Hall, via email



You'll find the radio stations under Guide in *Windows Media Player 10*



ONLINE SUPPORT

NAME: SUSserver **ADDRESS:** www.susserver.com If you've got a small network of PCs running Windows 2000 or XP, and you only want to download the latest updates for them once, this site will help you get your own Microsoft Software Update Server running.

→APPLICATIONS

Can't access backup

Q Recently, I upgraded my Operating System from Windows 98 to Windows XP Home edition. I found I still had use of MS Backup, which I used to back up both of my hard drives to an external hard drive connected via USB. All of my drives including the external were formatted with NTFS

Having recently experienced problems with *Partition Magic* I decided to wipe both internal drives and reload my back-up file from the external drive. I loaded Windows XP on to the first drive and to my horror could not find MS Backup. I therefore created an active primary partition (FAT32) on my second drive and loaded Windows 98. So far so good – I now had two OSes, the latter with MS Backup.

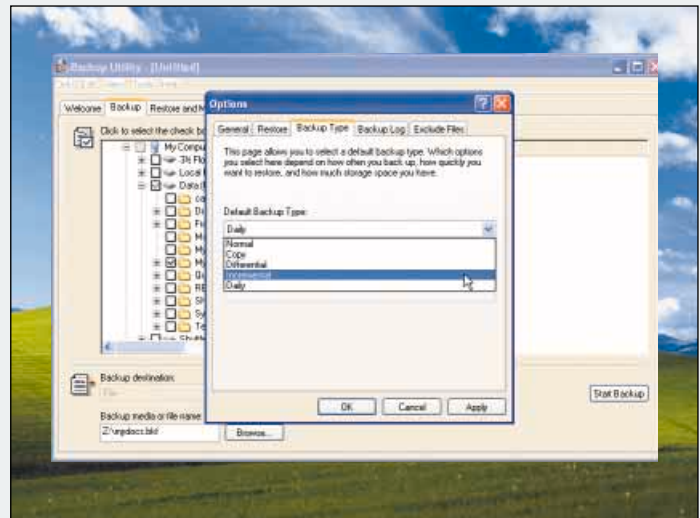
However, MS Backup couldn't read the back-up file on the external drive because it was 48GB and on a drive formatted with NTFS. I tried formatting an internal drive with FAT32 to transfer the back-up file on to my internal drive, which would hopefully be accessed by MS Backup. The system wouldn't permit this

transfer, informing me that there was insufficient space for this 48GB file, although the partition has a capacity of 55GB. I'm desperate to recover all of my work, files and pictures that are in this single back-up file, but I can't find a way to access it.

Bob Brown, via email

A Backup is available for XP Home, Bob – you'll find it on your Windows CD in the Valueadd\msft\ntbackup folder (double-click the ntbackup.msi file to install it). If you only have a recovery disc, you can create a Windows XP CD from the files on your hard drive by following the procedure outlined in *PCA136's* Experts and at www.nu2.nu/bootcd#wxp.

Had you been able to access your NTFS drive in Windows 98 (one way to gain read-only access to NTFS drives in Windows 95, 98 and Me is to download NTFS for Windows 98 from www.sysinternals.com/ntw2k/freeware/ntfswin98.shtml), you'd have discovered that the Windows 98 version of Backup is incompatible with the XP version,



Microsoft's Backup utility in XP isn't compatible with Backup from Windows 98 or Me

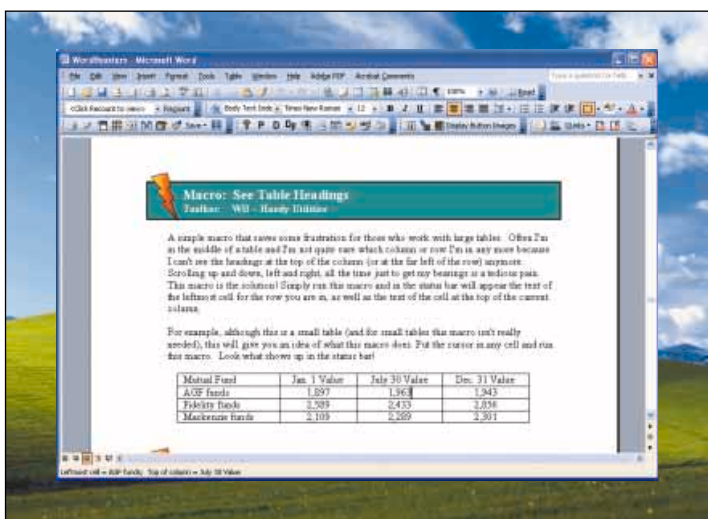
and vice-versa. Back-up files created in one won't work with the other. The best way to transfer files between two OSes is to use the Files and Settings Transfer Wizard or a back-up utility that works in all versions of Windows (*Ace Backup* 2004 featured on *PCA142*).

We'd also suggest reviewing your back-up strategy. Having all your files

in one 48GB file is asking for trouble: if that file goes down, you'll lose everything. To get around this, use a tool such as *Ace Backup* to separate your backups into different categories (and therefore files), so your email is kept separate to your work folder, for example. It'll also make it easier to back up your backups for extra security and protection.

A It's not possible using *Word's* own features. As you've found, the split-screen view is perfect for portrait-sized documents because you can use the top screen to contain the header and then use the bottom screen to scroll down your table losing sight of which column contains which value.

However, a shareware tool called *Word Boosters* adds 30 macros to *Word*, including one that enables you to view your table header from anywhere in your document, and another called *Simul-Scroll*, which does exactly what you want to using the split-screen view. Visit <http://wordboosters.com> for more details.



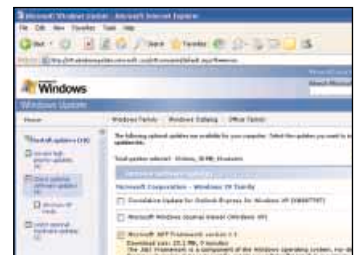
Position the cursor in a cell and click the See Table Headings button to see the relevant info

SystemWorks spotted missing file

Q After testing my PC using Norton *SystemWorks*, a program file was found to be missing. From what I can tell, dot/netinstaller.exe can't access a file mscoree.dll. I believe this is something to do with .NET Framework. Is this something I need to worry about? If so, how can I reinstall it? I'm running Microsoft XP Home Edition. Any help would be fully appreciated.

Peter Ginn, via email

A Got it in one, Peter! However, unless you specifically encounter an error message relating to this file outside of SystemWorks, there's no need to install the .NET Framework on your PC. Should you ever need to do so, however, you can install it through Windows Update. Select the Custom install scan and you'll find it in the Optional Software Updates section.

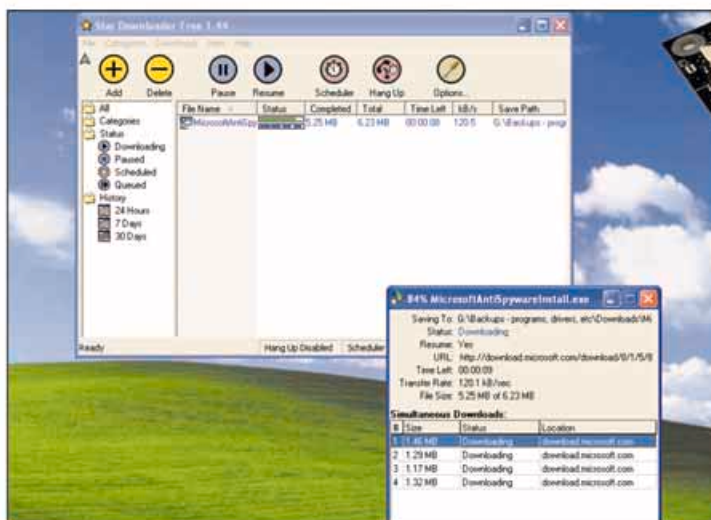


Microsoft encourages you to install .NET Framework through Windows Update

Google search disabled

Q I have set up a second user account (as an Administrator Account) under Windows XP SP2 Home Edition. When I access the Internet from my first account (using IE6) everything works correctly, and searches from the Google Home Page or from the Google Toolbar work fine.

If I switch to (or log on as) the second user, I can connect to the Internet from Internet Explorer, but if I enter a search term into the Google Home Page search box, or attempt a



Star Downloader needs to be reinstalled if you add extra user accounts to your XP system

search from the Google Toolbar, nothing happens. I don't even get a momentary 'progress bar' at the bottom of the screen when I initiate the search.

David Waters via email

A We initially suspected foul play, but David was able to dismiss

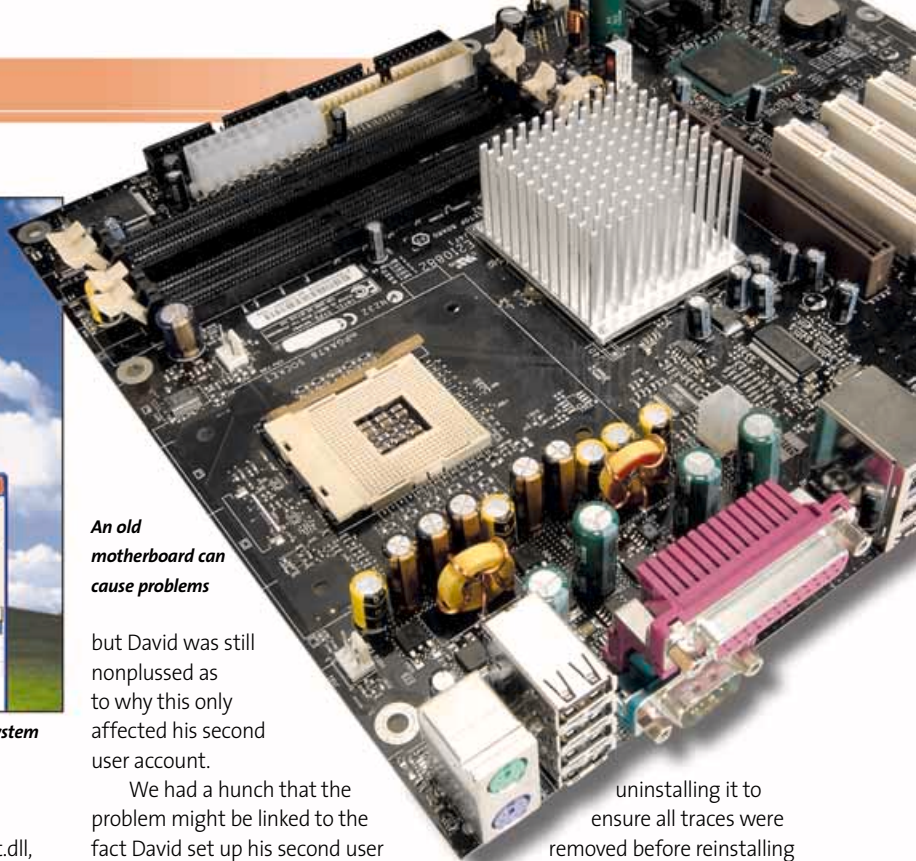
this after he tracked down the problem to an *Internet Explorer* add-on linked to the file *SDIEInt.dll*, which he traced back to *Star Downloader*. Disabling this through Tools -> Internet Options -> Programs tab (click the Manage Add-Ons button) on the second user account restored his Google functionality,

An old motherboard can cause problems

but David was still nonplussed as to why this only affected his second user account.

We had a hunch that the problem might be linked to the fact David set up his second user account after installing *Star Downloader*, so suggested he uninstall it from the main user account and then reinstall it again. This approach worked (David also ran a Registry cleaning tool after

uninstalling it to ensure all traces were removed before reinstalling it again) – clearly, *Star Downloader* needs to be installed after all your user accounts have been set up before it will work correctly in each.



→ SECURITY

Outlook Express messages have vanished

Q I'm looking for the answer to a serious problem I'm having with *Outlook Express*. While dragging and dropping email from one folder to another, about 700 disappeared into thin air. The folder I was moving them from is empty, and the folder I was moving them to is also empty.

They're not in any folder in *Outlook Express*. I checked all the folders, hoping that perhaps I missed my mark while dragging. No such luck.

I found the .dbx folders (in Local Settings\Application data) and it looks to me as though all 700 emails are still in the Group Emails folder. Even though that folder is empty in *OE*, it shows holding 1.99GB of something in the Group Emails.dbx folder. I'm assuming those are my 700 missing emails.

I've been trying just about everything I've found on Google for

the past six hours and cannot get those emails back into *Outlook Express*. I've tried importing them from that dbx file, but *OE* won't let me. I get a message that the folder I'm trying to import is in use by *Outlook Express*, which makes sense (I guess) as I have *OE* open while I'm trying to import them. I would very much appreciate any assistance you could offer - I'm at the end of my rope!

Meg A, via email

A The fact you've attempted to move 700 messages in one go strongly suggests the folder in question has become corrupt, Meg. As a result, you may need to try out a third-party tool called *OE-Mail Recovery* from www.oemailrecovery.com. Download the free trial and run it on your folders – it'll reveal if the messages are on the

folder waiting to be recovered.

If they are, you'll have to pay US\$45 to unlock the program and recover your messages. Before doing so, though, you might want to see if compacting the folder has any effect. We recommend you back up the Group Emails.dbx file first, though, so quit out of *Outlook Express*, locate the file and copy it to your desktop. Then launch *Outlook Express* again and choose File > Folder > Compact All Folders. If this has no effect, you'll have to bite the bullet and pay the registration fee for *OE-Mail Recovery*.

For more tips on *Outlook Express* file corruption, including preventative techniques to ensure you're not affected in the first place, visit www.microsoft.com/windows/IE/community/columns/filecorruption.mspx.

Right-click annoyance

Q I have a problem with *Internet Explorer*. I had a site in my Favorites folder that I deleted. The problem is that when I right-click anywhere on *IE* a menu comes up

→ READERS' TIPS

STEVE CLARKE FIXES HIS OWN START-UP PROBLEM INVOLVING WINDOWS MEDIA PLAYER

Media Player tries to play a VirtualDrive file

Recently, Windows Media Player started loading with Windows, throwing up the following message: 'The selected file has a scheme that is not recognised by Windows, but the player may still be able to play it.' The fault lay with my *VirtualDrive* software: a data file it loaded was wrongly identified by Media Player, which tried to play it. The problem was fixed by visiting this Registry key: HKEY_CURRENT_USER\Software\FarStone\VirtualDrive\0100\Retail*. Here I was able to disable autoliveupdate and autorun, which solved the problem.



HELP!

PHOTOSHOP ELEMENTS UPDATE If you're running Adobe's *Photoshop Elements* 3.0, then check out the 3.0.1 update. This makes it easier to download new creation templates from the Web, plus change the format of dates from US to European: www.adobe.com/support/downloads/detail.jsp?ftpld=2706.

→WINDOWS

Get updates on CD

Q I'm running Windows 2000 Pro on two PCs in a network in my home. I would like to update Windows and IE6, but it would take forever to do it on my 56k dial-up. Can I get the updates on CD, DVD or by using my friend's computer that has broadband access? I can't get broadband at my place.

David Housley, via email

A You can download any Windows update from the Windows Update Catalog, David,

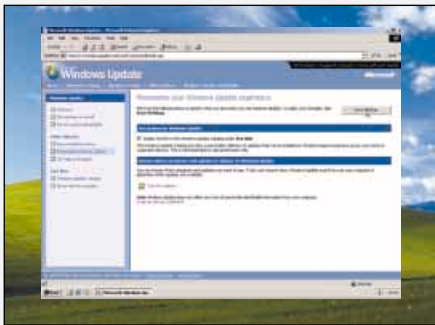
then run it on your PCs at home to get them updated. Before you do anything else, visit your friend with a blank CD and go to www.microsoft.com/windows2000/downloads/servicepacks/sp4/default.asp. From here, click the Download link and elect to download the Network Installation version. Burn this to CD and then install it on each of your PCs in turn.

Once this is done, visit <http://windowsupdate.microsoft.com> on each computer and make a note

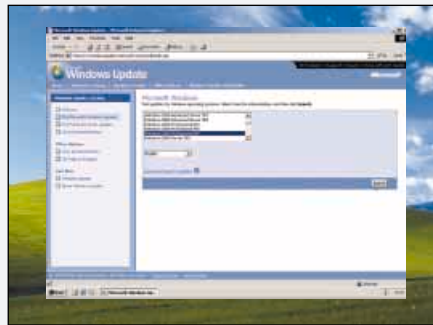
of the various updates you wish to download. Write down as much info about each update as you can.

Return to your friend's broadband Internet connection and log back on to <http://windowsupdate.microsoft.com>. Follow the walkthrough below to select and download all the updates to a folder on your friend's hard drive. When prompted, click Accept and the downloads will begin.

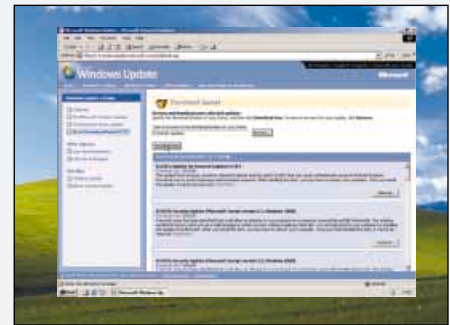
Once downloaded, burn the folder and its contents to CD, then return to your main PCs and install each update in turn. Once complete, make sure you download any you've missed by switching on automatic updates from the Automatic Updates Control Panel. Not only will this fill in any gaps you've missed, but it'll also silently download all future critical updates in the background when they're released, ensuring you stay completely up to date.



01 Launch Windows Update (<http://windowsupdate.microsoft.com>) and click Personalize Windows Update under 'Other Options'. Tick the 'Display the link to the Windows Update Catalog...' box as shown above and then click Save Settings.



02 Click Windows Update Catalog under 'See also'. Select 'Find updates for Microsoft Windows operating systems'. Choose Windows 2000 Professional SP4 under 'Operating system' and click Search.



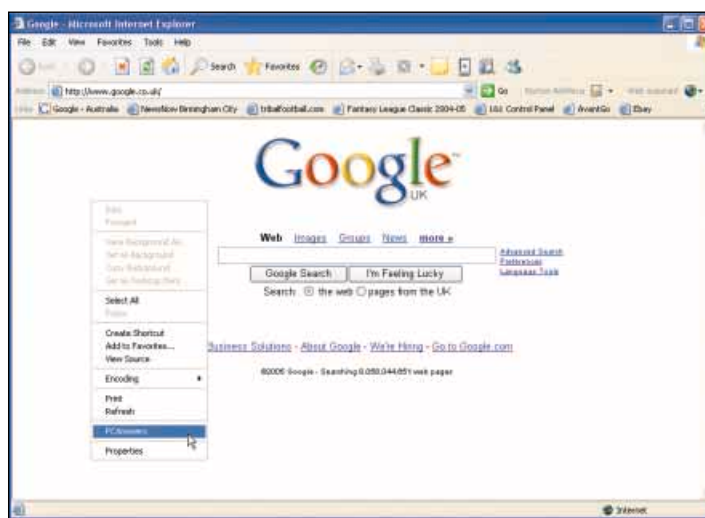
03 Select Critical Updates and Service Packs and go through the list matching up the available updates with those you made a note of by clicking Add. Once done, click Go to Download Basket, then click Browse, choose a suitable location and finally select Download Now.

with the link to the site that I've deleted. I've tried everything to remove it using the preferences in Internet Explorer.

Can you help me remove this link? The link does nothing to interfere with the running of the computer – I just want to remove it so much it's becoming a bit of an obsession?

Mark Roomes, via email

A Links like the one you're struggling to remove are placed on the Internet Explorer context menu via the Registry. Close Internet Explorer, then click Start -> Run, type regedit and press [Return]. Browse to the following key: HKEY_CURRENT_USER\Software\Microsoft\Internet Explorer\MenuExt. Here you should find further sub-keys, including the one containing the URL you wish to remove. Just right-click the sub-key and select Delete to remove it. When you next run Internet Explorer the link should have vanished.



Remove unwanted links from the IE context menu by taking a trip into the Registry

eDonkey crashes my PC!

Q I have an old PC, running an Pentium III that's run into some

problems recently. I've been using a downloading program called eDonkey, which has worked fine until recently.

Now, when I activate eDonkey, my PC will reboot itself after five to ten minutes. It's not a 'soft-reboot', meaning I didn't see the "Windows is

Shutting Down" screen; it's as if someone pressed the reboot button by force.

Why is this happening? This never happened to me until recently. The background programs I have running are ZoneAlarm, Norton AntiVirus 2004 and FreeRam XP Pro. Could this be a software conflict, compatibility problems or a sign of hardware failure?
Clyde McCal, Singapore

A Windows XP PCs reboot suddenly because they've encountered a STOP error, and the default behaviour is for the PC to restart. To alter this behaviour, right-click My Computer and select Properties -> Advanced tab. Click Settings under Startup and Recovery and untick the Automatically restart box.

Clyde did this and discovered his STOP error was an IRQL_LESS_THAN_EQUAL error. We did some research and discovered there's a widely reported conflict between ZoneAlarm

and *eDonkey*, and many recommend uninstalling *ZoneAlarm* and replacing it with another firewall (such as *Sygate Personal Firewall* from <http://soho.sygate.com>).

The actual conflict between *ZoneAlarm* and *eDonkey* results in a memory leak that eventually uses up all available memory and causes the PC to generate the STOP error. One workaround suggested is to try a memory optimisation tool such as *AnalogX's MaxMem* (www.analogx.com/contents/download/system/maxmem.htm), which may be able to manage the memory leak so it doesn't become critical. However, Clyde already had *FreeRAM XP Pro* installed, so this clearly wouldn't work in his case.

Unfortunately for Clyde, removing *ZoneAlarm* had no effect either and the STOP errors continued. It was at this point he revealed some important information about his 'dying' motherboard, which had already destroyed components – including his original network card – that were plugged into various PCI ports (these ports were now 'dead').

Obviously, replacing this motherboard should be his first priority, but Clyde was able to temporarily fix his problem by moving his replacement network card to another PCI slot. This resolved a hardware conflict that had caused his problem, and he was able to use both *ZoneAlarm* and *eDonkey* together without crashing his PC – for now, at least...

Am I vulnerable before logging on?

Q I'm currently running XP Pro with an NTL broadband connection. Each member of my family has a separate logon and the machine spends quite a lot of time without anyone logged in, sitting there patiently awaiting one of us to do so.



Unless you have an always-on Internet connection you won't be online when you're not logged on to Windows XP

→ WINDOWS

Help files won't open

Q I am unable to access Help and Support from the Start menu. If I try to open a chm file I get the following error message: 'Cannot open the file: mk:@MSITStore:C:\Windows\Help\filename.chm'.

I've tried searching the Internet, and found lots of useful information, but none of it has worked. I've searched Microsoft's Knowledge Base, ran numerous trojan/spyware catchers, and performed a full scan with *Norton Antivirus*. Nothing helps or works.

I'm running Windows XP Pro (SP2), which is fully up to date. I've not had to access H&S or open a chm file for some time, so I don't know when this stopped working. **Gary Middleton, via email**

A We contacted Gary to find out more about the solutions he'd tried. The most obvious one involves re-registering files, which is a tedious process. Gary had tried this with no success, and after suggesting other solutions like

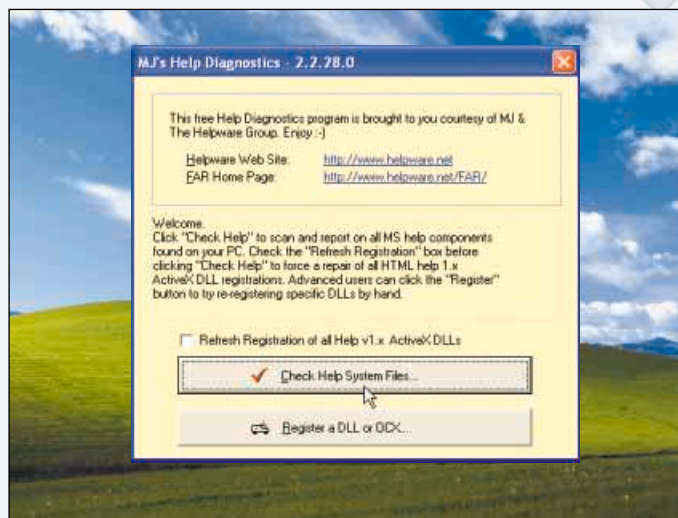
While reading the recent article on Windows Services it struck me that my PC might be open to attack. I use ZoneAlarm as a firewall and McAfee as my virus checker. These don't load (I believe) until one of us logs on as a user.

I'm concerned that while the PC is running at the log-on screen without anyone actually logged in, that the broadband connection might make the PC vulnerable to hackers and Trojans. Is this the case? In which instance, what can I do about it? I did wonder whether the broadband connection software might not have loaded at this point either – would this mean the PC is safe?

I also wondered whether loading up a user account and then using 'switch user' instead of logging out would leave the virus checker and firewall running in background, thus keeping the machine safe? Or would this have no effect?

Alan Cockerill, via email

A An excellent question, Alan. By default, when the welcome screen appears Windows has loaded itself and its core Services. Most



Problems with Windows Help? Try MJ's Help Diagnostics tool

emptying the Temporary Internet Files folder and running the Chkdsk tool on his hard drive, we were left scratching our heads.

Then both Gary and ourselves stumbled on a free support tool called *MJ's Help Diagnostics* (<http://helpware.net/downloads/index.htm#MJs>). This fabulous tool

checks your Help files for any problems and offers to repair them for you automatically. Gary ran the tool and it immediately flagged up hhctrl.ocx as not being registered properly. Gary clicked Fix and the problem was solved.

security software, including *ZoneAlarm* and the Windows XP Firewall in SP1 and SP2, install themselves as Services so that you're protected from the point this screen is reached. Obviously, if your machine has already been compromised then your security software may have been disabled: viruses and Trojans can terminate Services as well as anti-virus program processes, for example.

Additionally, you're given an extra layer of protection by the fact

that your NTL broadband connection is not always-on: it has to physically connect each time you log on as a user. In addition, logging off typically terminates that connection until the next person logs on. You can verify this by the fact the connection software should run each time a person logs on.

If you had an always-on connection such as Telewest broadband or you connect to the Internet through a router or shared connection that's already

→ QUICKIES

Stop opening new windows!

Q After trying some folder directory printing trial software, my folders no longer open in the same window when I open a subfolder. I've made sure that the option to 'open in same window' in Folder Options is activated, but this is ignored by the system. Can you tell me if there is a Registry change I can make to be sure the problem is solved?

David Walkiden, via email

A Click Start -> Run, type regedit and press [Return]. Browse to the following key: HKEY_CLASSES_ROOT\Folder\shell. Right-click the (Default) value in the right-hand window and select Delete. The value should be reset with no data, and when you close Regedit the problem should be solved.



Security flaws with Mozilla-based browsers are a cause for concern, but are less vulnerable, too

connected then the risk is greater. However, most routers have built-in firewalls that'll offer protection from incoming threats. Furthermore, as long as you have up-to-date Internet security software and take all the usual precautions, you should be protected from any risk.

Is Mozilla insecure?

Q I was just on the point of installing *Mozilla* on my PC when I read that there were security flaws discovered with the browser. I also recently read an article about *Internet Explorer 6* with Service Pack 2. As I don't have SP2 installed on my system, I'm unsure which browser I should plump for. I do have *Avast!* *Anti-virus*, *Spybot Search and Destroy* and *Ad-Aware* aboard my PC, though. If you can give me any pointers I'll be most grateful.

Len Mackenzie, via email

A We'll address two pressing issues with your whole setup Len. It's imperative that you install Service Pack 2 on your PC to give yourself the latest and most thorough protection for your PC. Don't install it through Windows Update though: either use the CD that was given away with *PCA138*, order one through Microsoft (visit www.microsoft.com/windowsxp/

sp2/default.mspx) or download it the full 240MB network installation directly from Microsoft. To do this, visit <http://go.microsoft.com/fwlink/?linkID=23354> and click the Download and deploy Service Pack 2 to Multiple Computers link.

You should also install a firewall on your system if you haven't already. Service Pack 2 will enable the basic Windows Firewall, but we prefer a third-party solution that incorporates outbound as well as incoming filtering, such as *ZoneAlarm* (www.zonelabs.com) or *Sygate Personal Firewall* (<http://soho.sygate.com>).

With regard to the specific article you read about *Firefox*, yes a flaw has been found in it and at the present time it's not been patched. However, as the articles state, it's unlikely to

be exploited by hackers because *Mozilla*-based browsers such as *Firefox* are still far less popular than *Internet Explorer*.

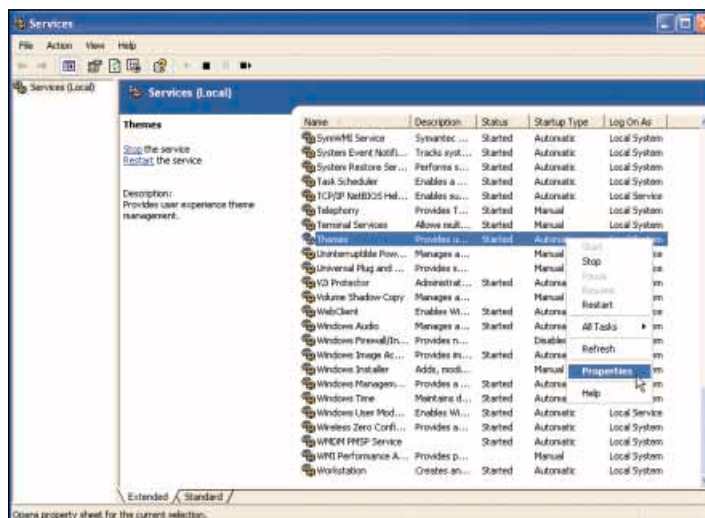
You can minimise the risk from this flaw by not downloading files directly from links in email, and using reputable Web sites to download other files from. The bug will be fixed in version 1.0.1, which should be released shortly. Alternatively, try *Netscape 7.2* instead (www.netscape.com), which is also based on *Mozilla* but is not affected by this flaw.

No Bliss background!

Q I'm experiencing a couple of problems with my PC. First, my Operating Systems is Windows XP, but under the Appearance tab in Display Properties, the Windows and buttons drop-down displays only the Windows Classic option. I can't find the Windows XP that I expect to see there. The result is I cannot enjoy the beautiful blue background of Windows XP.

Second, my date change buttons (backward and forward) don't respond in System Restore. I've checked that System Restore is still running. Can you help?
Odoliyi Lolomari, via email

A The most common cause of your first problem is that the Themes service has become disabled. To fix this, click Start -> Run, type services.



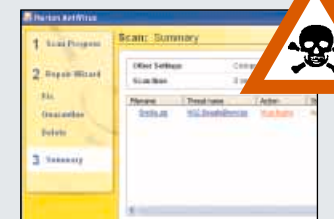
If the Themes Service isn't running, you'll be stuck with Windows Classic

HELP!

PRINTING PROBLEMS IN WORD 2003 If you attempt to print a document with an envelope attached to it you may find that while the envelope prints correctly, the document does not. If your printer doesn't have an updated driver available, visit this KB article for a workaround. <http://support.microsoft.com/kb/893673>.

VIRUS OF THE MONTH

SPOOFING



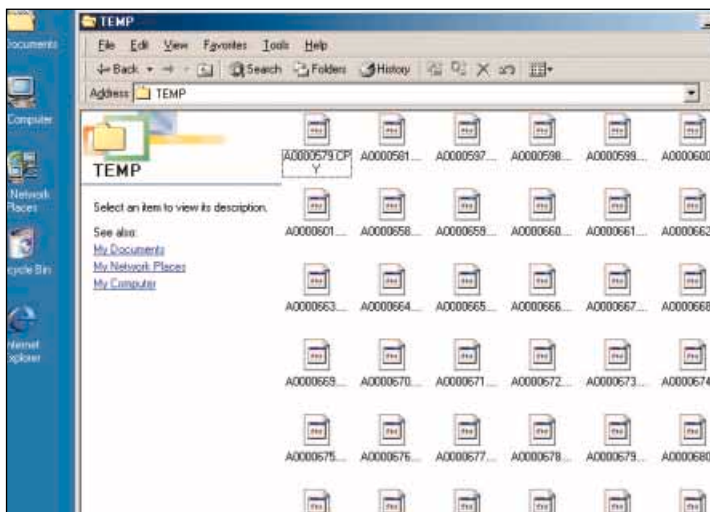
Viruses are finding new ways of disguising their true origins

At some stage you'll receive an email, either from a person accusing you of sending them a virus, or from an ISP auto-responder telling you that a virus originating from you has been blocked. However, it's possible that you weren't the source of the infection, especially if you update your AV tool, run a full system scan and come up clean. What in fact you have been the victim of is email spoofing.

Email spoofing is a new tactic from viruses. Viruses distribute themselves by first searching the infected PC for common files containing email addresses. They then replicate themselves using their own SMTP engine to silently send out infected email to everyone on that list.

The problem with this approach for viruses is that it left a trail, enabling you to warn the person in question that they were genuinely infected, which typically resulted. Now viruses are picking a person's name from the address book at random and putting it in the 'From' field of the infected email, thus confusing the recipient as to the origin of that virus.

Once again, the importance of up-to-date anti-virus protection and regular system scans cannot be emphasised enough. Furthermore, if you receive an infected email, don't automatically assume it came from the sender listed on the mail...



CPY files are temporary files created by System Restore that can soon clog up your system

msc and press [Return]. Scroll down the list until you find the Themes entry. Double-click this, click Start and set its Startup type to Automatic. Click OK and close. You should now be able to access Themes.

Your second problem is probably the result of a corrupt Restore point. Unfortunately, the only way to fix this is to disable System Restore – thus losing all your Restore points in the process – and then re-enable it. To do so, right-click My Computer

and select Properties -> System Restore tab. Tick the box marked Turn off System Restore on all drives and click Apply followed by OK. The Restore points will be deleted. Once done, remove the tick and click OK to re-enable System Restore.

Can I delete these CPY files?

Q I just scanned my computer and noticed that I have about 49,000 CPY files. Can I delete any of them and if so, how? I'm running Windows Me. Furthermore, why are some of my folders shaded? I don't remember them being like that before.
Ranulf, via email

A This is down to a bug in Windows Me. CPY files are usually found in your System Restore's Temp folder and are useless junk. However, deleting them is quite tricky: you need to boot from your Windows Me start-up floppy disk, choose to start without CD-ROM support (press [3] when prompted) and then type the following commands, pressing [Return] between each:

```
c:
cd _restore\temp
del *.cpy
```

This will remove all CPY files from your system. Remove your floppy disk and restart your PC. Preventing this build up in future is tricky: one

QUICKIES

Which browser?

Q You have recommended a move-over from Internet Explorer to Mozilla Firefox or Opera because of the security problem. My OS is Windows XP Home Edition SP2. I have two questions: which browser may I go for? Do I have to uninstall both Internet Explorer and Outlook Express before installing the preferred browser?

Name and address supplied

A Either browser is more secure than Internet Explorer, but you may prefer Firefox simply because it's completely free. The free version of Opera displays ads. You won't have to uninstall Internet Explorer or Outlook Express, and in the case of IE you'll still need it to access certain secure Web sites or the Windows Update site.

Locking user accounts

Q Is there a way to 'lock' XP Home Edition's user account types? I need to share this PC with others and prefer to be the only administrator. However, if the limited users can simply change their account type to administrator it makes the distinction between limited and administrator account types useless. Can you help?
Debbie MacPherson, via email

A A limited user cannot change their user account's type – that can only be done by an administrator like yourself. Log on as a limited user and check the User Accounts Control Panel. As you'll discover, not only is the limited user restricted to their own account, but there's no option available to them to change their account type. ■

→ READERS' TIPS

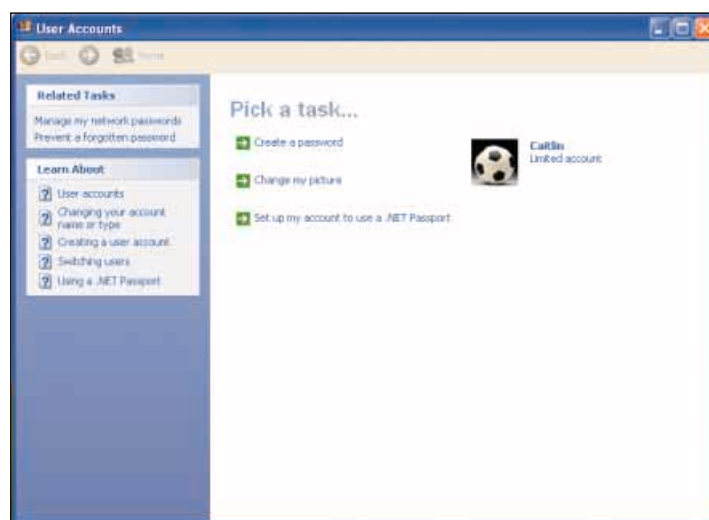
HARRY DAWSON HAS FOUND A WEB SITE THAT CAN IMPROVE READABILITY ON YOUR SCREEN

ClearType configuration

ClearType is Microsoft's way of improving the readability of text on-screen in Windows XP. It can be switched on or off from the Appearance tab of the Desktop Properties Control (click the Effects button and it's the second option down). However, if you want to fine-tune its settings or just learn more about it, I discovered a Web site at www.microsoft.com/typography/cleartype/. To access the Web utility, click the ClearType Web Interface link, and choose Yes when the security warning pops up. Then it's just a case of following the on-screen links to get the best-looking text for you.

way is to reduce the amount of space given over to System Restore, although you'll have less room for Restore points if you do this. To do this, open the System Properties Control Panel and switch to the Performance tab. Click File System and you'll find the slider on the Hard Disk tab. If, of course, you don't use System Restore at all, then disable it completely: from the same dialog, switch to the Troubleshooting tab and tick Disable System Restore. Click OK twice.

Finally, the shaded folders and files are hidden ones. To make them disappear, open an Explorer window and select Tools -> Folder Options -> View tab. Select 'Do not show hidden files or folders' and tick the box marked 'Hide protected operating system files (Recommended)' before finally clicking OK.



Limited users have no means of changing their user accounts to administrators



ONLINE SUPPORT

NAME: Microsoft Security **ADDRESS:** www.microsoft.com/security/default.msp This is the place to come when you want to keep an eye on what security fixes have been released for the full gamut of Microsoft products, including Windows and Office. You'll also find useful utilities and a range of tips designed to make you more secure.

Migrate from one ISP to another



Q I'm about to upgrade to broadband, and part of the process means transferring to another ISP. Will my favourites, email messages and so on be safe, and what's the best way to go about telling everyone my new email address?

Sean Clarke, via email

A You don't give much detail about which ISP you're transferring from, or which ISP you're transferring to. As a result, we've devised this flowchart that we hope will cover most bases. There are, however, some assumptions made. The first is that you're not transferring to or from AOL; if you are, the procedure is much more complicated and was covered way back in **PCA128**. If you missed that issue, you'll need the following software to convert your AOL address book and email messages to a format you can import into your email program: *ForMorph* (www.fkeeps.com/fmorph/fmindex.htm) and *eNetBot* (www.enetbot.com). To access your AOL bookmarks, take advantage of a free service at www.mybookmarks.com – use the free *Remark* tool to first import your AOL bookmarks, and then export them in a format readable in your non-AOL browser.

Another thing you might want to do is keep your old email address active, in case you continue to receive mail through it. If your old ISP operates a pay-as-you-go tariff, you can switch to it to keep this account active. Note that in most cases you'll be able to receive email, but not send it using your new ISP.

You can get around this by re-configuring your old email account so all replies you make to email that goes to your old address is routed through your new account. In *Outlook Express*, select Tools -> Accounts. Pick your account and click Properties. On the General tab, enter your new email address in both the Email and Reply to address boxes. Switch to the Server tab. Change the Outgoing Mail server to your new ISP's SMTP server. Tick the box marked 'My server requires authentication' and click the Settings box. Select 'Log on using', and enter your new email account's username and password. Click OK twice to make the change.

START HERE

Q ARE YOU SWITCHING EMAIL ADDRESS?

YES

Q GO THROUGH YOUR ADDRESS BOOK AND CREATE A BULK EMAIL MESSAGE THAT YOU SEND TO ALL YOUR CONTACTS INFORMING THEM OF YOUR NEW ADDRESS. TO PRESERVE THE PRIVACY OF YOUR CONTACTS, USE THE BCC FIELD. WOULD YOU LIKE TO PREVENT THIS PROBLEM IN FUTURE?

YES

A You might like to consider creating an email address that isn't linked to your ISP. Free Web-based addresses from www.hotmail.com exist, or you can purchase your own domain name from 1&1 (www.1and1.co.uk) that enables you to set up email addresses you can forward on to your current email address. When you next switch ISP, just change the forwarding address: people won't then need to update their address books. Prices start at £4 plus VAT for a .co.uk domain for two years.

NO

NO

Q ARE YOU SWITCHING WEB BROWSERS?

YES

A If you're switching to *Firefox*, just install and run the program – it'll detect your *Internet Explorer Favorites* and import them automatically. If you're switching to another browser that doesn't automatically detect other browser settings, use your old browser's export function to back up your bookmarks or Favorites to a HTML file, then use your new browser's import function to add them to your new program.

NO

Q DID YOUR OLD ISP HOST A WEB SITE FOR YOU?

YES

Q YOU'LL LOSE ANY FREE WEB SPACE YOU PREVIOUSLY HAD, REPLACED BY THAT OFFERED BY YOUR NEW ISP. IF YOUR WEB SITE IS POPULAR, YOU'LL LOSE A LOT OF TRAFFIC. WOULD YOU LIKE TO PREVENT THIS PROBLEM IN FUTURE?

YES

A Either look for some free Web space that isn't tied to an ISP – for example, <http://geocities.yahoo.com> – or purchase your own domain name. If you purchase your own domain name, you can either pay for dedicated hosting, or use 1&1's domain-forwarding service to forward the URL www.yourdomainname.co.uk to your new ISP's free Web space. If you move ISP in the future, you can transfer your Web pages and graphics to the new ISP's space, then point your domain name to that new Web address.

NO

NO

A You've transferred your email, Web Favorites and Web space. If you also made use of your old ISP's newsgroups, they may still be accessible through your new ISP; if not, check your new ISP's Web documentation to see if it offers an equivalent service. If not, you'll find free news servers on the Web with a Google search: try www.teranews.com for starters.

END



Never fear, Trojan Remover is here

Keep your PC free from Trojan horses. Joe Cassels looks out for Greeks bearing gifts

We live in an era of malware, software designed to damage your PC or your data. Most of us know not to open executable email attachments; we run firewalls and regularly scan for viruses. However, even software that passes a virus scan can be dangerous. Some programs appear to have a useful function, but hide malicious content that's designed to be triggered at a

certain date or when you perform a certain action. Such programs are called Trojans, as they use a similar technique to the successful Greek battle plan of legends.

Sometimes it's hard to spot a program that hides a Trojan. For a list of current Trojans browse to www.nsclean.com/trojanlist.html.

Trojan Remover works in a similar way to an anti-virus application, but

it's designed to home in on Trojan horses. To get a copy, point your browser at www.simplysup.com/tremover/details.html. You get a free 30-day trial, after which the program costs \$23 (around £12).

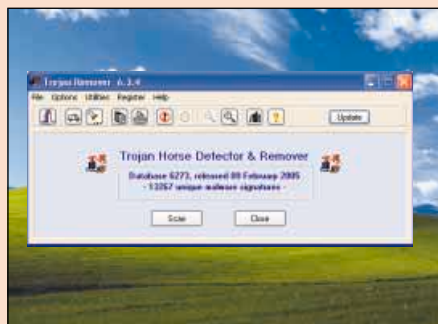
While there are similar programs available, *Trojan Remover* is effective, cheap and fast. Given the number of malware scans that you're now advised to run regularly on your

computer, this is a really desirable quality. Just like any anti-virus program, you need to update *Trojan Remover* frequently to ensure that you're protected against the latest Trojans. You can search its database of suspects to find out what specific nasties do. The program also boasts a handy feature that enables you to undo browser hijackings, which is ideal for *Internet Explorer* users. ■

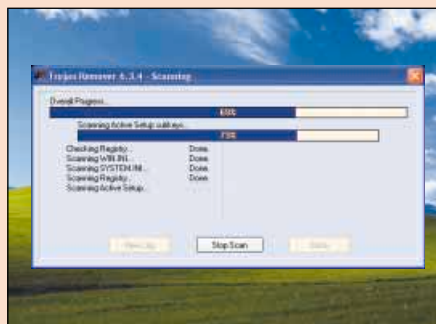
→ STEP-BY-STEP GUIDE

Horses for courses

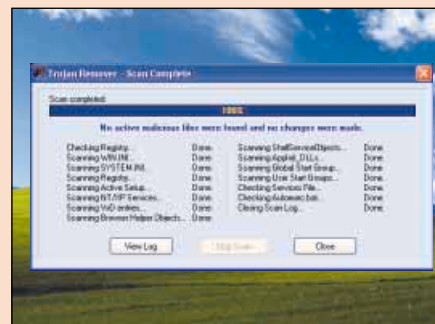
Root around for Trojan horses and then send them packing



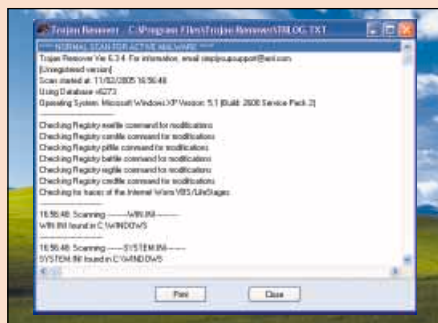
01 Install and launch *Trojan Remover*. If you use *AVG Anti-Virus*, you'll need to exit the Control Centre by right-clicking its System tray icon and choosing Quit AVG Control Centre. Back in *Trojan Remover*, click Scan.



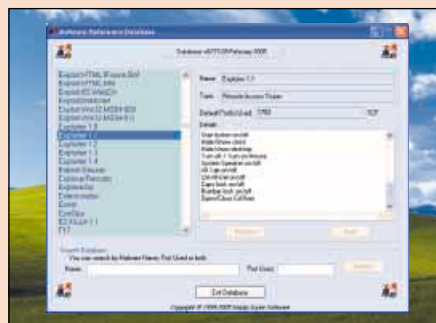
02 *Trojan Remover* scans the Registry and all active processes, searching for any evidence of Trojan activity. It also looks for the presence of key signature files, in a similar way to many anti-virus suites.



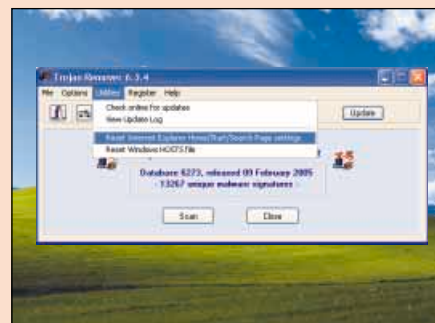
03 The progress of the scan is shown, as are each of the key scanning tasks. Once complete, the number of Trojans found will be displayed, alongside any suggested action to take. Click View log for more detail.



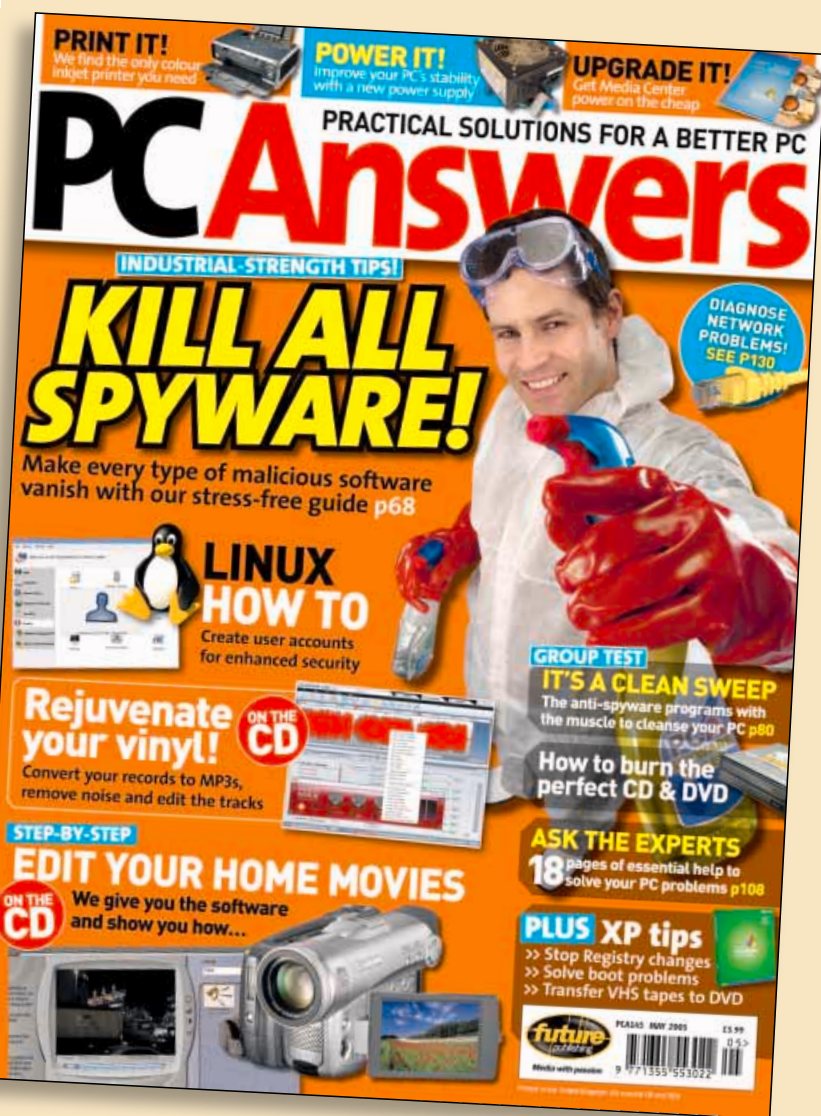
04 The log file provides a detailed breakdown of the progress of the test, including accurate timings. Click Print to get a hard copy if you need to examine the contents closely. When you're finished, click Done.



05 Back in the main *Trojan Remover* window, click Malware Reference Database (the little library icon). Here you can search for known Trojans or select one of those displayed to see information about what it does and how it operates.



06 Click Utilities -> Check online for updates -> Check for new updates. If your browser is hijacked, choose Utilities -> Reset Internet Explorer Home/Start/Search Page settings, to get things back to normal quickly.



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CLINIC

We take a top computing issue from a reader and show you an in-depth way to solve it

Laptop revitalisation

“A friend gave me their old laptop. This Sony VAIO worked fine for the first few weeks, but one day it suddenly asked for a password on booting, and we can't get around it (neither me nor my friend can remember ever setting one up). It seems that can't circumvent Windows 2000's password protection easily, so I was wondering what to do. The laptop didn't come with any discs, so reinstalling Windows isn't going to be simple, although there's nothing on there that I need to keep.”

KELLY WINTERSON

After Kelly dropped the laptop off, the first thing we managed to do was move past the password request, by pressing [F8] after the POST screen and ignoring the return from hibernation mode, which had brought up the password request in the first place. Unfortunately, this was just the start of the problems we had with the system, with all manner of crashes and occasions where it failed to reboot properly.

One reason for such instability could be the number of programs and utilities on the PC. While Kelly hadn't installed any new applications on the laptop, she had installed firewall and anti-virus software. This is a good move, but this wasn't enough to stop the machine becoming infected by a variety of Trojans and possibly a virus, too.

Blind update

The laptop's main problem was that it'd never been brought up to date with Windows 2000 Service Pack 4. Apart from sorting out a slew of application and driver incompatibilities, SP4 also shores up several exploits that had been used by the malicious software that had found its way onto this machine.

In fact, it was something of a fluke that we discovered anything suspicious at all. It was only when trying to reduce the amount of programs at startup that we noticed questionable references to 'draven.exe'. This file appeared in the Registry in a number of places, and despite claiming to be part of the Windows Update system, the fact that we had never heard of it before had us worried. A quick search on the Internet using another machine confirmed that the laptop was infected by the WORM_SDBOT.AXB worm.

Of course, having another machine available to sort out this laptop was essential, as you don't want to connect a potentially infected PC to the Internet. In this case the worm collects passwords and tries to send them to its creator. Using another system meant that we could download the necessary Windows 2000 SP4 patch, Microsoft's AntiSpyWare Beta software and updates for the virus protection programs. Burning these files to a CD ensured that we didn't pass infected files to any other machine, and they also came in handy later on.

Plan B

Unfortunately, we couldn't make the laptop work well enough for us to return it to Kelly. While it would be fine for most of the time, now and again it would fail to reboot, indicating that there was something still awry with the old installation of Windows. There are times when you just have to reinstall, and this is what we had to do here.

This introduced another problem: without the bundled CDs, getting the machine up and running to the same standard as before was going to be difficult. Luckily, we had a Windows 2000 installation disc on hand and a quick look at the underside of the machine revealed the necessary Microsoft product key for the

There's a point in any system repair job when you have to give up and reinstall the OS from scratch



→ THE EXPERT



ALAN DEXTER
Upgrade expert

machine. As we already had the Windows 2000 SP4 update on a CD, this meant that we could set up the machine fairly quickly, provided that we could find the drivers.

Along with the Windows 2000 product key, the base of the machine was also home to the Sony model number of PCG-9526. Sony has a good collection of drivers on a number of its Web sites, but no matter which one

→ STEP-BY-STEP GUIDE

Reinstalling Windows on a laptop

Similar to reinstalling Windows on a desktop PC, the difference here is the importance of propriety drivers



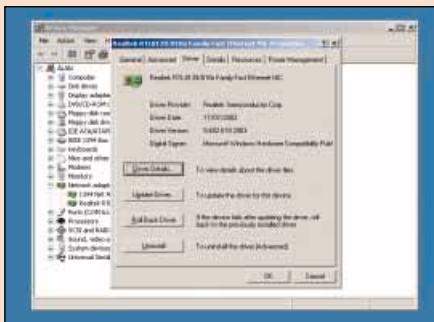
01 Windows 2000 installs from bootable CDs – essential if your laptop doesn't have a floppy drive. Check the boot priority in the BIOS, slide in the CD and you're off.



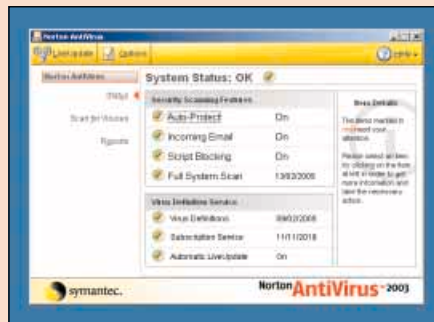
02 Once finished, you should install the latest service pack for the Operating System – in this case Service Pack 4. Such updates are available for download from Microsoft's Web site.



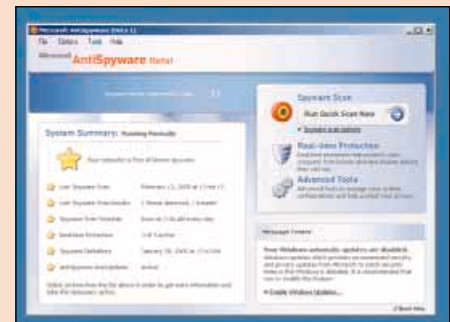
03 If you don't have the driver CD, then take a look at the laptop manufacturer's Web site, you should find what you're after is there, although probably as several separate downloads.



04 Check the documentation for the drivers you download. Some will have setup wizards, while others will require that you used the Device Manager to install the drivers correctly.



05 The next step is to install your anti-virus and firewall utilities of choice. Trial and free versions of such software are just as valid as paid-up alternatives if kept up to date.



06 Finally, install your anti-spyware program. If you're stuck for an option, then Microsoft's utility is available from its Web site and is free for the moment.

we tried, we didn't have any luck. Thankfully, there's another way of accessing the drivers: enter the unique serial number for the machine. Sure enough, www.vaio-link.com came up with the goods, and after downloading the relevant files we were ready to begin installing a copy of Windows 2000 that would be up-to-date and protected from the outset.

All's well...

Afterwards, the machine was stable and much quicker now that it was free of another user's data and programs. We would've preferred to have installed Sony's software bundle at the same time, but such software wasn't available for download from its Web site. The first thing that Kelly did on being given her laptop back was to install *Firefox* and *Thunderbird*, to give her another level of protection against any future attacks. ■

→ FURTHER INFORMATION

VIRUSES, TROJANS AND SPYWARE

Firewalls and virus scanners just aren't enough...

We all know that accessing the Internet without the necessary protection will put you into a whole heap of trouble. Anti-virus software has been a mainstay of the PC software scene for years now, and the inclusion of a firewall in Windows XP SP2 has shown that this is an area that isn't about to go away. A third type of utility has recently made its way onto this checklist, and that's an anti-spyware client.

The likes of *SpySweeper* and *Ad-aware* are staple components of any software setup for those in the know, but the proliferation

of the particular type of malicious code that these are designed to counter has reached new levels. Microsoft's decision to get in on the act can't be ignored, and while its *AntiSpyWare* software is still in beta, it's worth downloading just to check your system for any obvious files. If you try several of these programs, you'll find that different ones can pick up different files.

You should treat such software exactly as you do your virus software: it's useless if it isn't kept up-to-date. If you're

downloading such software for use on another machine, make sure you have the latest build so as to have the best coverage for the first scan you do on the PC.

Another piece of software that you need to keep up to date is the OS itself. If you're running Windows XP, then Service Pack 2 is essential when it comes to patching security holes and exploits. Service Pack 4 is just as important for Windows 2000, if not more so due to the fact that Windows 2000 users have been under attack for a lot longer than the more recent OS.

PCANSWERS PRESENTS...

Hardware helpdesk

The authoritative guide to solving all your hardware problems

→ CONTACT

Send your questions to:
pca.hardware@futurenet.co.uk

DIGITAL IMAGING

SLIDE SCANNING

Q I need to convert my 35mm slides to digital pictures and improve their quality. Can you help?
A Latif

A There are two approaches you can take and it depends on whether this is a one-off job or ongoing project, and what quality of output you need. If you have a small collection of slides for a one-off conversion, then it's often most cost-effective to get a scanning bureau to do the work for you. Check out www.filmscanning.co.uk/n_s/prices.php for a guide to prices.

If this conversion is part of a long-term plan then invest in a scanner that supports the scanning of 35mm slides. The price will depend on what the end use is for. You can purchase an A4 flatbed scanner with built-in slide scanner of reasonable quality for around £70, such as the Epson Perfection 2480. Alternatively, you could opt for a dedicated 35mm scanner which will be closer to £200–£500, with a good range of products from Nikon and Minolta.

IDE CONNECTIONS

COUNTING THE PINS

Q I'm in the process of building a new PC. Can you advise me if the use of the 80 pin (ATA 100) cable will work with an IBM ATA 100 hard drive (master) and a Samsung DVD ROM

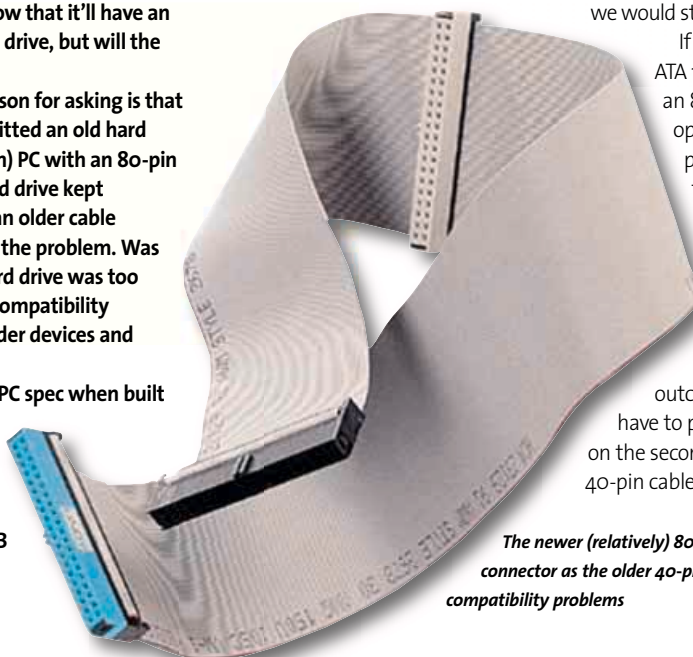


If you have a one-off need to get a handful of slides converted, the simplest way is to use one of the many scanning bureaux, such as www.filmscanning.co.uk

drive (slave). I know that it'll have an effect on the IBM drive, but will the DVD drive work?

The main reason for asking is that some time ago I fitted an old hard drive to a new (ish) PC with an 80-pin cable and the hard drive kept crashing. Fitting an older cable (40-pin) resolved the problem. Was it because the hard drive was too old, or are there compatibility problems with older devices and 80-pin cables?

The planned PC spec when built is as follows:
AMD 64 3500 processor;
Abit AV8 motherboard; 1GB memory; Aopen 256m 6800GT

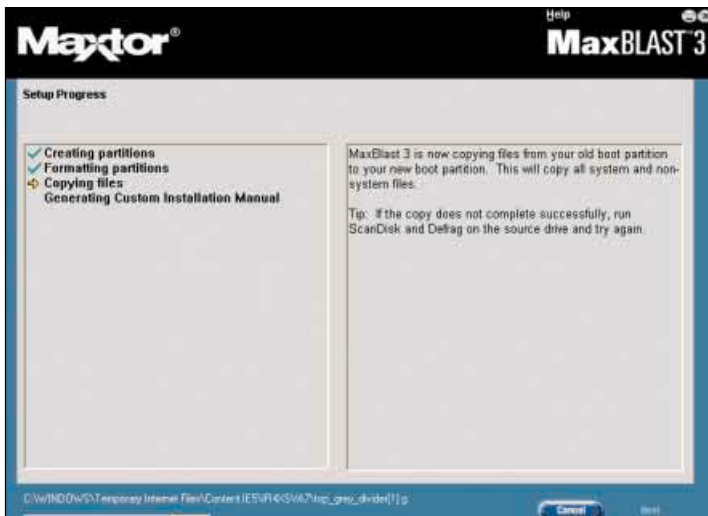


The newer (relatively) 80-pin ATA cables use the same connector as the older 40-pin cable, but there can be compatibility problems

graphics card; Hitachi 160GB SATA; IBM 40GB hard drive (master); Samsung DVD ROM (slave) IDE1; and Plector 712A DVD writer (master) IDE2.
Name supplied

A There can be compatibility problems with both options, with 40-pin cables causing problems on faster devices and 80-pin cables adversely affecting slower devices. These issues can be as serious as devices not being recognised at all. It would have been useful to know the model numbers of all the proposed drives, to more accurately predict the best choice, but we would suspect that an 80-pin cable is the way to go and we would start under this premise.

If the hard drive is an Ultra ATA 100 model then it'll need an 80-pin connector to work optimally. If you do run into problems then you could try swapping the DVD-ROM drive and the DVD Writer, using a 40-pin cable on the Secondary channel if necessary. If this still doesn't produce a suitable outcome then you may have to put both the DVD drives on the secondary channel with a 40-pin cable.



The MaxBlast software supplied with Maxtor drives will simplify the installation process

HARD DRIVES INSTALLATION GUIDE

Q I want to install an 80GB hard drive alongside my Compaq 40GB drive. The new one is a Maxtor 3.5 series. Could you please tell me everything I need to do after I put the drive into my PC?

Mannie

A There are so many factors to consider that it's hard for us to give an answer without providing a detailed guide that will fill these pages. We have covered hard drive installation in the past in issue 142, but without knowing what you want to achieve we're probably going to be best off pointing you in the direction of an online resource.

Some of the considerations are whether you'll be using the new 80GB

drive solely for storing data as a secondary drive to the existing 40GB one. You could also be keen to use the new drive as your primary drive with Operating System on: would you be doing this from scratch, or instead copy all the data from the 40GB drive and then format that drive to use for data storage?

All of these and more are possible, but it'll vary dramatically the route you want to take. Check out http://maxtor.custhelp.com/cgi-bin/maxtor.cfg/php/enduser/std_adp.php?p_faqid=1171 for an interactive Maxtor tutorial that will help. Don't forget to use the MaxBlast software that comes with your new Maxtor drive, as this has some neat tricks up its sleeve (as discussed in issue 132, when we showed you how to use it to set up a multi-boot system).



A monster-gaming rig for big bucks, but do you really get value for money?

SYSTEM UPGRADE FINDING THE BEST PC

Q I'm looking to buy a new computer in the next few weeks and I'd like to know which the best PC is. I'd also like to know what you think of the Intel P4 925XE processor and motherboard, along with DDR2 533 memory. Are these new items worth having and does anyone sell a PC with this motherboard and chipset plus DDR 533 memory? It would also be good to know what the cost is. The system must have an x16 PCI Express 256MB graphics card if possible and at least two 200 SATA hard drives plus 1GB RAM. I'm also looking for a 17- or 19-inch monitor, 450 Watt power supply and powerful tower fans for cooling throughout the system. In essence, what is the latest and fastest machine it's

possible to buy? I use my computer mainly for games and for more basic stuff such as writing letters. Currently, I have a 2.6GHz AMD processor with 1Gb DDR RAM, two hard drives, 128MB 8X AGP GeForce 5200, SoundBlaster Live and a 15-inch TFT monitor.

John Steel

A The best PC is a subjective question, but if you're looking for the ultimate in performance for a home PC then the simple answer is that you will pay through the nose for it and it won't be the best available within a month of having it delivered. We found a system that meets pretty much all of your needs, with the processor and motherboard combo you

Understand key hardware terms and concepts

LCD monitors

When we talk of LCD monitors, the most common used technology is TFT (thin film transistor). In TFT displays there's an additional transistor driving each colour (RGB) for each pixel, which dramatically improved response times over older LCD technology. Other advances including improved brightness (measured in Candelas) and a wider viewing angle mean that there's no compromise being made when you choose a LCD monitor today. Prices continue to

fall and while they're still more expensive than their CRT counterparts, you can pick up a good 17-inch LCD display for under £150. Our favourite deal at the moment is the Digimate L-1715 for £140 at www.amazon.co.uk.

Most LCD displays will have a standard VGA 15-pin connector for hooking up to the video out on your graphics card, but on some higher spec models there will also be a DVI connection. If your graphics card has a DVI-out



Flatpanel prices are dropping all the time, but they're still pricier than CRT monitors connector it's preferable to look for a monitor with the same, as you'll be sending a much purer signal to your display.



Look for a model with a brightness rating over 250cd/m², a contrast ratio of at least 400:1 and a response time of under 20ms. Choose a model with DVI connection if your graphics card supports it or you plan to upgrade. Don't buy a model with integrated speakers if you care about the quality of your audio output. Typically, they are of a poor standard.

wanted, plus most of the peripherals and components.

Take a look at www.dell.co.uk and browse for the Dimension XPS Gen-4 in the Home & Office Desktops section. You can customise the spec to get what you are after, but you'll be pushing close to £3,000. Some easy trade-offs could pull this down by over £500, but we suspect that this isn't something you're interested in.

Our best advice from a practical standpoint is this. It looks like the driving force behind your PC demands is gaming. Your current system is no slouch and if you stuck a £300-£400 graphics card in that system, such as a high-spec ATI X800 AGP card, it would cope with everything that you could throw at it for another nine to 12 months at least. By this time, if you upgraded you'd save far more than the £400 you spent, as the cost of an equivalent system will have dropped by more than that and there'll be even faster, more exciting stuff out there for you to go for. If having the latest and greatest is just something you want to have, then take a look at the

Dell system, or alternatively build one yourself that you can keep upgrading to stay ahead of the game.

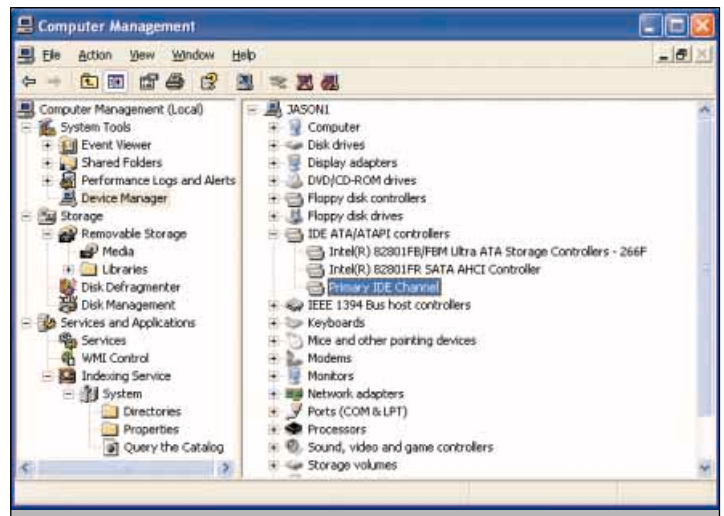
DISPLAY DRIVERS UP THE RESOLUTION

Q I'm attaching a photograph, the resolution of which seems to be rather psychedelic in appearance. I've tried to increase the colours from 16 but am unable to do so. The monitor is a Gateway 2000; Gateway EV700 on Standard PCI Graphics Adapter (VGA). The reported colour depth and resolution is 16 colours and 640 x 480 pixels. Is there a solution to my problem?

Ted Murphy

A The image you sent us is one of the sample Windows images and when we opened the file it looked absolutely fine. There's nothing wrong with the image; rather, the problem lies in your system's inability to run at higher than 16 colours.

You're running a 'standard PCI graphics adapter' and this is a basic display driver within Windows that the



You can check whether DMA is enabled within the Computer Management Utility

system uses when it doesn't know what your graphics card is, or when there's a problem with the driver. It contains a basic set of commands that all graphics cards understand, and therefore enables you to have a system that works, but as you realise, not one that is any use for anything other than diagnosing and fixing the problem.

trawled through the Samsung Web site, but it seems that the company has forgotten about it, as it doesn't show up on its list of drives.

The driver I have is from the bundled package I got when I bought the drive. It shows up as a Microsoft generic driver. Is this the problem? One thing I should mention is that

→ FURTHER INFORMATION

Do you run into similar problems as those seen in these pages and find different solutions? Let us know and we can share our expertise.

Readers tips

Multi-page printing

In your February edition, Helen Deering emailed a query about how to print multi-page posters. She could try the following: <http://homokaasu.org/rasterbator/>.

This will rasterise her image to however many pages she wants. All that's required is the online submission of the image in question, and making a few settings

on the walk-through. There's a gallery showing the results for hundreds of users. The site also includes a nice story about a bunch of school kids draping a huge image of their classmate over the entrance to their school, which could be seen a mile away. I think it only really works in black and white, though. **Gilbert Francourt**



Imagine turning a much-loved photo into a piece of wall art...

I'VE GOT A DVD DRIVE THAT DOESN'T PLAY ANY DVD OR CD-ROM DISCS. IT WORKED WHEN I FITTED IT SIX MONTHS AGO...

You need to obtain the driver for your graphics card and install this. You haven't given us any system information, so we can't point you in the right direction, other than to say that you should check your PC's documentation to see what graphics card you have in your system. Then visit the manufacturer's Web site to download the latest driver. Once you've installed this, your system will be able to use higher resolutions and colour depths.

OPTICAL DRIVES NO DMA ON FAILING DRIVE

Q I've got a DVD drive that doesn't play any DVD or CD-ROM discs. It worked when I fitted it six months ago, but a couple of weeks ago it just stopped. The BIOS recognises it and so does *SiSoft Sandra*. I found a Hardware/Flash update from the Samsung site (SFDWIN.EXE), which I applied. It did indeed update the Firmware, but every time I insert a disc, a message comes up stating 'Unknown format disc in drive J'. The drive is a Samsung SD-616Q. I've

when I ran a test using the excellent app *Nero* (which you included with issue 142), the test ran a positive and showed everything as working fine except that this drive hadn't had DMA enabled. All my other drives work without any problem. It's set as the Master on the secondary IDE channel, with two hard drives on the primary channel. How do I enable the DMA on the drive that's giving me grief? I've a strong feeling that's what's causing this problem. I'm running Windows 2000 as the Operating System. **Colm**

A First of all we'll cover how to switch on DMA. Go to the Computer Management utility in the Administrative Tools section, right-click your IDE controllers and select Properties. Go to the Advanced Options tab and change the Transfer mode to DMA if available. This is similar to the process for Windows XP, which can be accessed through the Device Manager.

However, while this may solve the problem, we're concerned that it may

Digital coaxial cables will transfer the digital connection from your soundcard to your speakers if they have the necessary connections

not. We assume that the problem appeared before you tried to update the firmware, but it's worrying that you used a firmware update when you also state that there's nothing on the Samsung site for your specific drive. We would suggest visiting the Samsung site and using the smart update tool for firmware, but it may be that you have damaged the drive with this update if it isn't for the right drive. Visit www.samsungoms-europe.com/samsung.php?section=download to access the Live Firmware Update tool.

It also concerns us that the drive did work fine up until a couple of weeks ago, which suggests that some change to your system may have caused an incompatibility. We would suggest using System Restore to see if you can roll back any changes and see

whether that has any effect. It may also be worth trying swapping some of the drives around to see if the problem lies with the drive itself, or with one of your controllers.

BROADBAND CONNECTION PROBLEMS

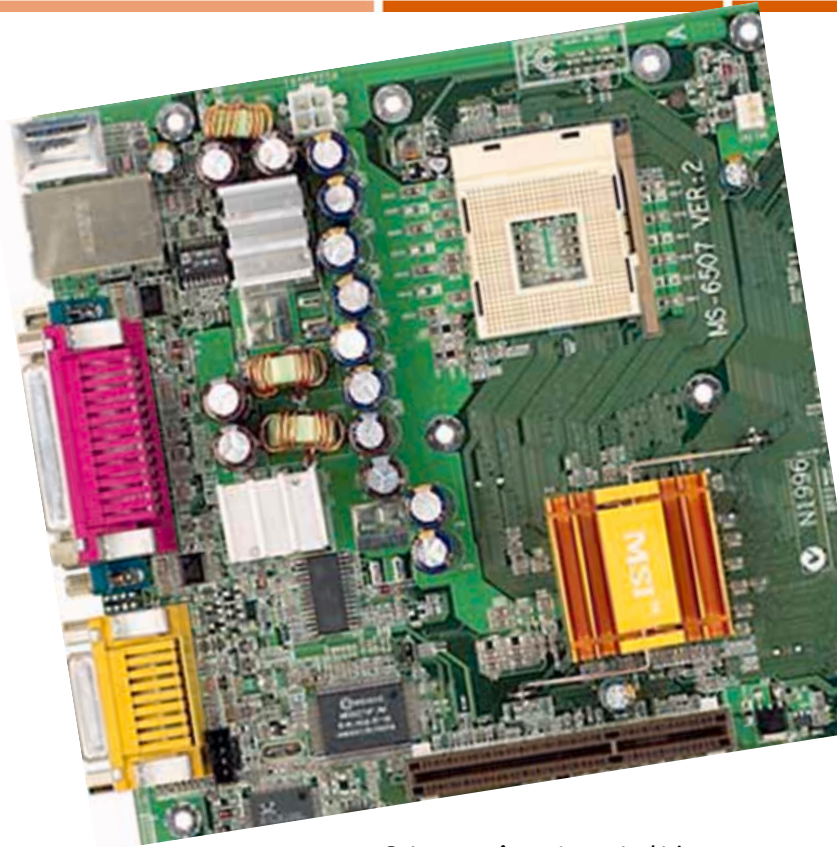
Q I've just bought a Netgear DG834g wireless ADSL firewall router to set up a network at home. I've done everything it says in the installation guide and I can get my PC to see the modem, but I can't get the modem to connect to the Internet. Any help would be appreciated.
Eric Moore

A There are often problems with connecting up a broadband network for the first time and the problem can lie in one of several areas: your broadband capability from BT, your broadband services provider (if different from BT) or the hardware configuration. The first thing to do is to check that your broadband has been enabled by BT and the service provider. You'll need to ring the helpline, whose staff will take you through some tests.

If they can confirm that this is working then the problem most likely lies with the router setup. They may be able to help you with this, but you may end up having to go to Netgear for assistance. We're sorry that we can't be more specific, but there are just too many variables for us to be able to give you useful advice.

The Netgear helpline number is 0800 015 0562 and the BT help number for broadband is 0800 800 060. The good news is that we have tested these help lines in previous articles and they are generally responsive and helpful.

The DG834g is an excellent piece of kit once you have it configured



Go to www.msicomputer.com to obtain information on your MSI motherboard before considering component upgrades

I need a 'four-channel' soundcard? Shaun

A We'll take your questions in order. There's no reason not to add a hard drive larger than 40GB. We would recommend going for another IDE drive, rather than trying to add SCSI to your system. In most common home-use scenarios there's little benefit to SCSI against a modern fast IDE drive. You can keep the hard drive you have exactly as is and just have the new drive as a repository for storing additional data, or installing programs to. Alternatively, you can have your new drive with the Operating System on, format your existing drive and have that as an extra storage device. There are a variety of possibilities that will affect how you carry out the upgrade, but they can all be done.

SYSTEM UPGRADE FINDING THE RIGHT UPGRADE.

Q I'm thinking of upgrading my PC Windows XP machine. At the moment I have a Pentium 4 Intel 1.8GHz, GeForce 2, 64MB graphics card and a 40GB hard drive. My motherboard is a Micro-star International MS-6507 with a bus clock of 100MHz. Can you help me with the following questions?

First, will it matter if I choose a bigger hard drive and would you recommend an IDE or SCSI drive? Second, can I still use my original hard drive linked to my new one? Third, will it matter if I pick a graphics card at random? Finally, what particular chip would fit my motherboard please?

In addition, I received a TFT monitor for Christmas with integrated speakers. Out of the two speaker slots on the back of the PC

WILL IT MATTER IF I CHOOSE A BIGGER HARD DRIVE AND WOULD YOU RECOMMEND AN IDE OR SCSI DRIVE?

only one sends sound (either to the desktop speakers or monitor speakers, dependant of course on which one is plugged in). The monitor speakers sound tinny even though it's quite expensive. Is this because

With regards to the graphics card, you cannot ever just pick one at random, but there's an additional caveat with your motherboard. Not only do you need to make sure the board you pick is an AGP model, but

you need to make sure it'll operate as a 1.5V card. You should be safe with most 4x/8x AGP cards, which typically have universal compatibility to run at the various voltages that the motherboard supports. Retailers aren't particularly good at displaying or even knowing this information, so we would suggest looking carefully through the manufacturer's Web sites before making a decision. A good resource with more info can be found at www.sysopt.com/articles/agpupgrades.

With regards to the processor chip that'll fit your system, MSI has a friendly compatibility guide that provides tests on various processors for each of its boards. The fastest processor that will fit the MS-6507 is a Pentium 4 Northwood 2.4GHz 400FSB.

Finally, most speakers fitted into monitors are generally cheap. While the quality of source is important, changing to a better soundcard is unlikely to resolve that. We would suggest ignoring the speakers built into the display and getting a decent set of desktop speakers.

SCANNERS

XP COMPATIBILITY

Q I have a new Diamond 1200 Plus scanner and Windows XP, but it won't detect the scanner. I've the same problem with my old Genius Vivid, which is why I bought a new one, thinking that it was the scanner at fault.

Is there any way to fix this other than taking the scanner back for a refund? I've tried patches, disconnecting the cable, reinstalling the software that came with it, but nothing works.

Someone asked me what my chipset number was but I haven't a clue as the PC was built by my nephew, and I don't remember any booklets with it except Windows for Dummies, which seems about right just now. I've exhausted every message board and followed countless patches/instructions, but it won't budge. Someone said to uninstall the drivers but I'm so exhausted I can't even remember how to do that. The PC spec is as follows: 1GHz AMD chip, 256MB RAM, 32MB video card, 13GB hard drive, 32x CD burner.

Samantha Jones

A The first thing to do is uninstall any software and drivers that you have added when buying this scanner. The simplest way to do this is with the System Restore feature of Windows XP, which you can access by selecting Start -> All Programs -> Accessories -> System Tools -> System Restore.

The next thing to check is that the USB port recognises that a device is plugged in, even if it's not seeing it as a scanner initially. We would recommend connecting any USB devices that are causing problems directly into the ports on the PC rather than through an external hub and we would also advise that you remove any other USB devices other than keyboard and mice if applicable.

Once you get this far, it's a case of adding the

A low-profile card can often be the answer if your case is non standard

right driver. We found an XP driver on the Packard Bell site at http://support.packardbell.com/uk/myopc/?PibItemNr=6929290000&PibItemParent=platform_scanner_diamond1200plus. Once you've installed this, check in Device Manager that the scanner is listed and that there are no conflicts.

USB UPGRADE

LOW PROFILE CARDS

Q I have a Fujitsu/Siemens non-tower computer whose case is four inches high, and I need a USB2 card for it. The problem is that I can't find one with the metal 'spine' short enough to fit inside the case. I've been to the manufacturers who referred me to their parts suppliers, but it only supplies replacement parts. Any advice would be welcome.

John Rundle

A We don't have the exact dimensions for your PC to help

us find a perfect match, but we would suggest taking a look at one of the low profile cards such as the Belkin Hi-Speed USB 3-Port Low Profile PCI Card available at www.belkin.co.uk.

While this may not provide an exact solution it'll give you more opportunity, if you are feeling either desperate or adventurous, to be able to customise the metal plate so that it'll fit without damaging the card. Note that tampering with the card's metal plate will invalidate the warranty.

PRINTING

DISAPPEARING TEXT

Q I'm trying to print some flyers for a local band and I'm using Word (which I know isn't ideal). The problem is that I've some white text of a solid black background. When I try to print this all I get is the solid black background. None of the text is appearing. I'm using an Epson R300 printer on a system with Windows XP Home Edition and Office XP. I've set the printer to only print in black (greyscale), but this seems to be taking it too literally. Do you know whether this is something I'm doing wrong in Word or is there something wrong with the printer settings?

Robin Grieves

A The most likely cause of this is an error in the original release of Windows XP. If you turn off the greyscale setting and print in colour, you should find that the white text will be printed. It's because there are two DLL files used by Windows during printing that change white text to black when a solid or shaded

background is detected and the printer is set to black and white mode.

When you think about it, it's logical in most cases but it doesn't help in your situation. While printing in colour is a quick workaround, the solution is to upgrade to Windows XP Service Pack 2. More details on how to obtain the service pack can be found at <http://support.microsoft.com/kb/322389/EN-US/>.

You need the right drivers to ensure that any external hardware will work properly



A camera setting on some of the early Nikon D70s caused problems for people not using Windows XP

DIGITAL PHOTOGRAPHY

MY FIRST DIGITAL SLR

Q I've just bought a second-hand Nikon D70. I've been a photographer for several years and have always used Nikon SLRs. Previously, I hadn't been able to afford a digital SLR, so this is my first digital camera.

Unfortunately, I'm having a problem connecting it to my PC and downloading images. I seem to be following all the instructions yet can't get it to work. I'm connecting to the USB port on my PC, which is running Windows Me and I'm trying to use the Nikon View software. I know this may not be as precise as some of the questions in the magazine, but do you have any advice to point me in the right direction?

Howard Durrell

A While there are various potential problems with the USB connection, by far the most likely is one that is down to the camera. The problem has since been corrected, but Nikon realised that the early models of the D70 were set as default with the USB transfer option as PTP (Picture Transfer Protocol).

This is fine for Windows XP users, but if you're using an earlier version of Windows such as yourself, then it'll cause problems. To rectify it, simply access the camera setup and change the USB Option from PTP to Mass Storage. You should now be able to connect to your PC without problems.

FILE TRANSFER

MOVING LARGE FILES

Q I need to regularly transfer an 800MB file from my work desktop PC to home. I've got a CD-writer at work, but it doesn't fit on that. I tried looking into 'overburning', but that required some additional software, which even if I could get it to work I wouldn't be able to install because of network

Focus on...

Each month we look at the top current issues from a leading hardware manufacturer

AOpen

www.aopen.nl/tech

I've experienced a high failure rate in burning/recording with recordable discs (CD-R) of certain brands. Furthermore, the CD-rewriter often doesn't acknowledge the discs existence. What can I do?

If you visit the AOpen Download Centre at <http://download.aopen.com.tw/> you can check for the latest version of firmware for your drive. You can also upgrade the supplied Nero software with the latest patch, which you will find at www.nero.com. Both suggestions will improve the drive's compatibility with blank CD-Rs.

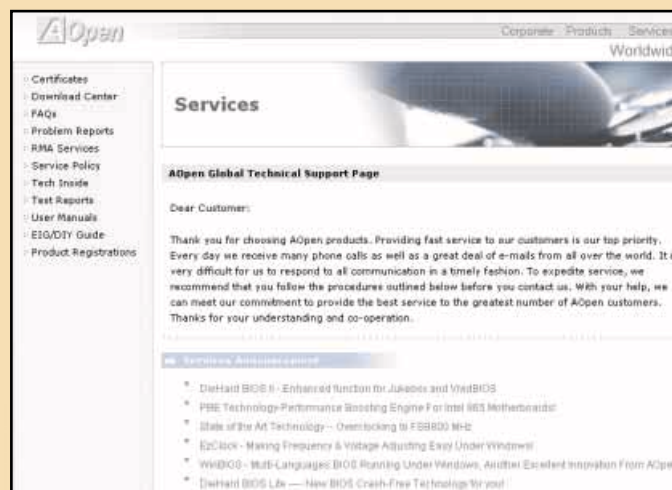
Why, after changing my motherboards FSB with EzClock, does the system automatically lock up (AK86-L system)?

There's an incompatibility with the AK86-L and EzClock v1.08.06.

You need to upgrade EzClock to V2.01.05, which is accessible from the Download Centre.

What's the HRTF technology in your PC soundcards?

It stands for Head Related Transfer Functions and is a set of audio functions that attempt to create spatial 3D effects from stereo speakers.



If you're experiencing trouble with your PC's AOpen components, go to www.aopen.nl/tech

administration policy. I've only got a dial-up connection at home, so that isn't really an option.

I've spoken to my bosses and they don't think I should be taking work home, so won't authorise a hardware upgrade to a DVD writer. It's more of a convenience for me, as it means I don't have to stay late, can get home and see my kids and then do some catching up after they have gone to bed. I think this is reasonable, but I can't convince the powers that be. Can you think of a sensible solution that will help me out, that doesn't involve installing anything that requires administrator privileges, which I don't have?

Helen Weiss

A There's one possible solution that sounds like it could be perfect for you. Pocket flash drives, often known as pen drives, have been around for a while and provide a great way of transferring files quickly and easily via the USB port. The prices of flash memory have been steadily falling and you can now buy these drives



Transfer up to a whopping 1GB of files quickly and easily with this Bytestor Flash drive

with 1GB capacity for around £60 online. You then simply plug the drive into a USB port and it's seen as an additional drive in your PC that you can drag and drop files on to. In most situations you don't even need to install a driver, let alone any additional software.

DRIVER UPDATE
WHICH DRIVER DO I NEED?

Q I've a problem with my graphics card and I know what to do, but

I don't know how to do it. Or rather, I do know how to do it, but I don't know what file to use. What am I talking about? Updating a graphics card driver. For some reason my PC display is playing up and stuck in 256 colours with a default driver. I know I need to update it, but I'm not sure what the exact graphics card is.

The only two things I know for sure are that it's an AGP model (because of the slot it's in), and that it's based on an nVIDIA chip. How do

→ FURTHER INFORMATION

Online Hardware Help

Top resources on the Web for helping you solve your hardware problems

CD FREAKS.COM

www.cdfreaks.com

An excellent site devoted to optical drive technology. Whether you want to know about the latest products or want to get some help from the vibrant online community, you'll find there in the forums.



ACE'S HARDWARE

www.aceshardware.com

A fantastic collection of reviews and articles on the latest hardware, with an emphasis on the latest PC processor

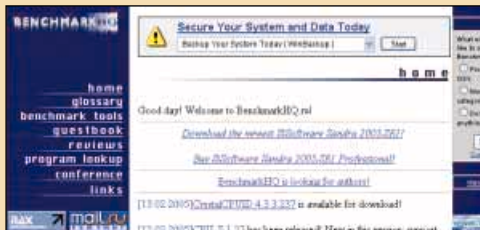


architecture and technology. You'll also find some active forums.

BENCHMARK HQ

www.benchmarkhq.ru/english.htm

A simple site that gives you links to a broad range benchmark software for all different elements of your PC, from graphics to CPUs. There are also user ratings, so you can see how popular the respective benchmark applications are.



THE TECHZONE.COM

www.thetechzone.com

TTZ, as it's affectionately known by regulars, is a competent hardware news and reviews site that's up to date with all the latest developments. There's also a good collection of How to and overclocking articles.



I find out what the card is to make sure I download the correct driver?
Tim Blackmore

A The solution with an nVIDIA card is simple, because of the company's unified architecture policy for its reference drivers. Visit www.nvidia.com/content/drivers/drivers.asp and download the Forceware graphics driver for GeForce and TNT2. This driver supports every card from the TNT2 right through to the GeForce 6800 Ultra.

If you hadn't been so lucky as to have an nVIDIA chip (and we'll put this here for other readers who may find themselves in the same predicament), chances are you would have had one made by ATI. To help identify an ATI card, you can use the tool online at <http://apps.ati.com/102lookup/index.asp> that enables you to enter information from the video BIOS, or from the 102 part number. You can find tips on identifying the 102 part number at <http://mirror.ati.com/support/identify/cardver.html>.

CD-RW DRIVES

ASSESSING THE POWER OF X

Q I'm looking to replace an old 12x CD-RW drive that is past its best. I was looking at 32x, 48x and 52x drives and naturally make the assumption that a higher number is better. I was talking to a friend who said that it wasn't really important and that it

matters whether the drive uses CDV or CLV to make any meaningful comparisons anyway. Do you know whether this is true? What these acronyms stand for? More importantly, which drive should I go for?
Peter Magnusson

A The 'x' in a CD drives speed rating is based on a multiple of 1x which is the transfer rate required to play a 74 minute CD in 'real time' or 74 minutes. This is equivalent to 150KB/sec transfer rate. When writing a CD at 12x, you would be transferring data at up to 1,800KB/sec, which would burn a 650MB CD in about six minutes (plus some time for writing additional table/lead-in information). As you can see from this a higher number is better, but it's important to remember that the numbers quoted are maximums, which is where your acronyms come in. The two are actually CAV and CLV.

CAV stands for Constant Angular Velocity. Here, the disc spins at a constant rate and therefore the drive can read data faster at the outer edge of the disc than it can in the middle. CLV stands for Constant Linear Velocity, where the spin speed is adjusted depending on where the data is being read from, to always approach the maximum.

In summary, CLV and a higher

If you're replacing a CD-RW drive, it makes sense to buy a DVD writer, which gives you a lot more flexibility at little additional cost



speed is better, but now nearly all drives are 48x or 52x. These are theoretical maximums anyway – rarely achieved in real-world tests. We would suggest Lite-On and Plextor as two good reliable makes of CD-RW drive, or better still why not upgrade to a DVD-rewriter, which will still write your CDs and give you additional functionality. You can pick these up for under £50.

HARDWARE UPGRADE

CARRY OUT AN AGEING OVERHAUL

Q Not being a believer in euthanasia, I do not wish to put down my old workhorse of a PC. It has been with me since 1999, and cost the proverbial arm and leg when first purchased. Unfortunately, a bit like me, components are beginning to falter and I would like to conduct some reconstructive surgery on it. Please find attached the exported system information file, oh PC surgeons.

Basically, I would like to fit a faster processor onboard, perhaps even a new motherboard and add another hard disc – the SCSI hard drive at

present works wonderfully but is a bit small. I know size isn't everything, but storage is. I'd like to achieve all of this while keeping costs down. Being on a pension with a fixed income makes that a priority.

I'm not really a modern gamer, but I like to play the occasional real time strategy game. I would also like to be able to convert AVI files to watch on my DVD player. Currently, I use Cucusoft video recorder, but it can take days to convert a large file. I'm waiting in eager anticipation for some assistance in this major reconstructive hardware surgery.

Brian Houston

A From what we can see your system is running a Pentium 2 processor (slot 1) with 512MB RAM, running Windows XP Pro on an MS-6116 motherboard. The graphics card is an ATI Xpert with a Creative SBLive soundcard. It also seems that in addition to the 18GB SCSI drive (running off an Adaptec SCSI 2 adapter), you have a 120GB Maxtor external drive plus a couple of internal CD/DVD writers, and an external DVD writer.



If you see one of these languishing within your PC's case and you want to upgrade your system, then you'll have to buy a new processor and motherboard

We'll take the software challenge first of all. As budget is an important factor, we would stick with a piece of shareware or freeware, but there are many alternatives to Cucusoft. Go to www.download.com and search for AVI and you'll find hundreds of options. We'd recommend taking a look at *AVI to VCD/SVCD/DVD Converter 2.48*.

With regards to the hardware, it's going to be a bit trickier. You're not going to be able to upgrade your processor without replacing the motherboard, which will also mean upgrading the memory. To do this on the cheap we would look at a

Pentium 4 2.8GHz processor, which you can purchase for around the £100 mark online. You could then pick up a motherboard for around £40, such as the Gigabyte GA-8IPE775. The same investment again would get you 512MB of DDR PC3200 memory.

You would then have the choice of adding either a SATA or ATA hard drive (the motherboard supports both) and that would just leave the graphics card, where you could go for something like an ATI Radeon 9550, or 9600 for around the £50 mark. Most of the rest of your components you could easily reuse. ■

REMEMBER!

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REMEMBER: Live, Informative, No-Cost and Genuine!

Will we have to wait for kit that supports ADSL2+? No, Westell already have compatible modems and routers available (www.westell.co.uk)



HOW IT WORKS

ADSL

It's killed off dial-up for most of us and revolutionised Internet access in the UK. Mike Williams explores how ADSL works

Conventional analogue modems first appeared back in the 1950s, and transmitted data at the lethargic rate of 300 bits per second. New tricks were developed and performance reached 56Kb/s by the late 1990s, but this technology could only be pushed so far. The phone system only used 8,000 samples per second, which with an 8-bit code meant there was an absolute limit of 64Kb/s. This was less, in practice, thanks to the inevitable line noise. It was time for a new technology to take over.

Fortunately, the answer had already occurred to Dr Joseph Lechleider, who worked at Bell Communications Research (a spin-off from AT&T Bell Labs) in the US. Back in the late 1980s, he realised that voices transmitted over the phone system

only used a small part of the available frequencies, from 0 to 4KHz. Copper phone wires could easily handle signals up to 2MHz, and perhaps reach 6MHz over short distances, leaving lots of space to transmit other things. Lechleider proved through mathematical analysis that this extra

bandwidth could be used for broadband communications. Moreover, this was just one of a number of discoveries that makes him the father of DSL technologies. It was a breakthrough, but there was another problem still to be solved.

It's certainly true that phone lines have more bandwidth than required for voice calls, but making use of it isn't particularly straightforward. The signal characteristics vary drastically with frequency, which makes it difficult to send and receive data reliably. It took another academic, John

Cioffi (now a professor at Stanford), to realise the solution.

His idea, known as Discrete Multitone modulation (DMT), was to split the signal into 256 separate channels of approximately 4MHz each. This immediately solved the

problem of signal characteristics, because variations within such a narrow frequency weren't significant.

Independent channels

Better still, each channel could be used to send or receive data independently of the others, almost as though 256 dial-up modems were connected to one system. When a ADSL modem initialises, it analyses each channel in turn, and allocates a transfer rate of between 2 and 15 bits per second.

The theoretical maximum for the combined signal is around 16Mbps, although that depends very much on your location. The further you are away from the local telephone exchange, the more high-frequency signals will be lost and the lower performance will be, for example.

Fortunately, the separate channel scheme provides an interesting way to compensate, in that your Internet traffic can be asymmetric. Most people want to download data over the Web, rather than uploading it, for instance. Consequently, if most

channels are allocated to traffic flowing from the ISP to your PC, then you'll see faster download speeds. That's the idea that puts the A into ADSL (Asymmetric Digital Subscriber Line). So, how does this work in practice?

Separating signals

As ADSL signals and voice calls use different frequencies, you might think you can just plug your ADSL modem straight into the phone line. Unfortunately it's not quite that simple, and you'll probably need to add a microfilter first. There are a couple of reasons for this.

First, although phones don't use signals above 4KHz as a part of their regular function, electrical interference can affect much higher frequencies – right into the ADSL range, in fact. The end result is likely to be a broken Internet connection just about every time you pick up or put down the phone. Second, your phone may be similarly affected by interference from the ADSL signal, resulting in voice calls with plenty of clicks and sound. Bad news all around, then.

Micro-solution

Add a microfilter, however, and both of these problems will go away. These small adaptors plug into your phone socket on one side and have connectors for your phone and modem on the other. The electronics inside keep the voice and broadband frequencies properly isolated, so neither will be affected by the other. Unfortunately, you need to install microfilters on every telephone extension, but at least they're fairly inexpensive to buy (from £2.50 at www.ssilttd.co.uk).

The microfilter helps your broadband signal get out onto what's called POTS (the Plain Old Telephone System), but it won't survive out there for long. Conventional copper phone wires won't carry high-frequency ADSL data for more than a few miles. Unless you live out in the country the signal should reach your local

telephone exchange, though, and that's really all you need.

Once an ADSL signal has passed through the local loop (the telephone wires from your house to the local exchange), it's split again into separate voice and broadband components. This is similar to the process used in your microfilter, except this time the two frequencies are sent off in entirely different directions.

The voice part is directed onto your phone company's public switched telephone network (PSTN), where the calls you make are handled as normal. Meanwhile, your ADSL connection is plugged into another device called a DSLAM (Digital Subscriber Line Access Multiplexer), which helps separate out the wealthier broadband users from the rest of us.

Local lines

This works by taking all the local ADSL lines in your area, and splitting them into several different Permanent Virtual Connections (PVCs). Every PVC supports a different BT price plan, so one might be for the regular 512 Kb/s home user and have up to 50 people connected, while 2MB business users will be on a faster PVC with a maximum of 20 other users at one time, for example. From this point on the PVC uses high-quality digital lines, so there should be no more worries about distance or data loss. Your connection is routed to a BT Remote Access Server, and then authenticated by BT's Radius (Remote Authentication Dial-In-User Service) server.

The final stage sees you redirected to your ISP's home gateway. It's far too complex to explain in detail here (and nothing to do with ADSL anyway), but it's basically the ISP's interface with the phone system. On one side they receive data from thousands of users connecting over their ADSL lines. This passes through a large IP router and some other electronics and comes out as TCP/IP traffic at the other end. This is now directed to whatever Web site or Internet resource you're interrogating, and the whole process starts again, only in reverse.

That's a quick run through the basics of ADSL as it works now, but there are changes coming soon. With 8Mbps ADSL available in the autumn, and ADSL2+ (with a 20Mbps top speed) out some time next year, there are plenty of performance gains still to come. ■

→ FURTHER INFORMATION

ADSL 2+: faster, easier, more reliable

Could ADSL soon seem as slow as dial-up used to be? We look to the future...

ADSL has helped millions of Internet users wipe away the nightmare memories of dial-up Web access, but it's just the start. In January 2003 the ITU approved a standard catchily known as G.992.5, or ADSL2+ to its friends, and this is no minor upgrade.

It's specifically designed to cope better with noise, for instance, on connections that are a long way from their local exchange. Training is more effective, power can be reduced, and there are various noise cancellation schemes, all of which make ADSL2+ much more reliable. If you're too far from your local exchange to get ADSL, this new technology could change things.

Meanwhile, a wide range of efficiency improvements also boosts speeds. You can expect the standard upload rate to double, at least, and download performance could reach 20 Mbps (although you may need to be within a mile or so of the exchange for that).

What if ADSL2+ doesn't deliver the speeds you expect? The new standard includes

support for lots of diagnostics. This starts with static reporting on values such as line noise, loop attenuation, and signal-to-noise ratio. It extends to real-time performance monitoring, so infrequent noise problems will be recorded as well.

There are plenty of other benefits, too. Some are very simple, such as a faster initialisation time of about three seconds. Others are more complex. One particularly interesting feature involves the ability to split bandwidth into different channels for individual applications. We'll have to see how this works in practice, but presumably you'll be able to allocate a fixed amount of bandwidth to your Internet telephone software, for example, ensuring high-quality results no matter what else is going on.

It's a mouth-watering list, but the best part of all is we may not have that long to wait. BT could begin trialling the technology this year, with ADSL2+ getting a public launch some time in 2006.

ADSL2+ is a tantalising prospect, and with a public launch looking likely in 2006, we may not have long to wait for the next Web-access revolution



Essential utilities

Whether for troubleshooting, sleuth work or getting the job done under pressure, **Dan DiNicolo** outlines his must-have networking tools

Anyone connected to a network, be it one at home, work or even the Internet, needs to be familiar with some key tools to get the job done. In some cases the 'job' is troubleshooting connectivity problems. In others, it's gathering the information necessary to deal with hackers and spammers. Sometimes, it's about performing some network-related task in a pinch, when other tools that you're used to working with just aren't available or accessible.

Whether you're already Net-savvy or completely new to the networked world, this month we're here to walk you through the essential utilities that every network user needs to know. You may not need them right this second, but sooner or later you'll find yourself in a situation where they'll come in very handy.

Introducing... ping

Ask any networking guru to name the most essential network tool out there, and nine times out of ten they'll answer with ping. Quite simply, ping is

usually the first tool that networking folk turn to when trying to solve a problem. When you can't connect to a computer on your network, for example, a friend offering help will likely ask whether you're able to ping it. Ping's primary job is to test for connectivity between any two computers or routers on a network

running TCP/IP, so it provides some key information and a great starting point for dealing with network problems.

The idea behind ping is simple: the computer from which the ping is issued sends a message to another computer connected to the network. If the other computer receives this message properly, it sends back a reply.

If one computer on a TCP/IP network can ping another, it effectively means that the two systems are capable of communicating with one another.

Send a ping command

So, if you were trying to determine whether two PCs could communicate, you would begin your troubleshooting by trying to ping the other computer. To do this, start by opening a Command Prompt (just type cmd from the Run command and click OK). From here, you'll want to type ping, followed by the IP address or name of the PC you're trying to reach. For example, to ping your router you would probably type something like ping 192.168.1.1 and then press [Return]. Similarly, you could try to ping a server on the Internet by typing ping www.yahoo.co.uk. If TCP/IP communication is functioning correctly, you should receive successful replies from the PC you're pinging.

Now, if you receive anything other than four replies, a couple of things could be true. A message stating that

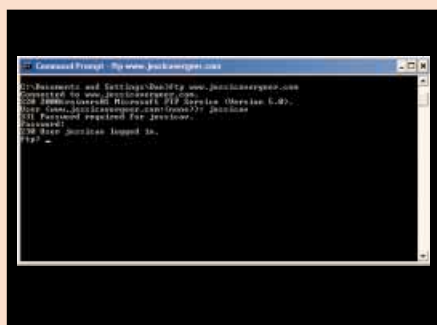


NeoTrace Express adds a little geography to a traditional trace command

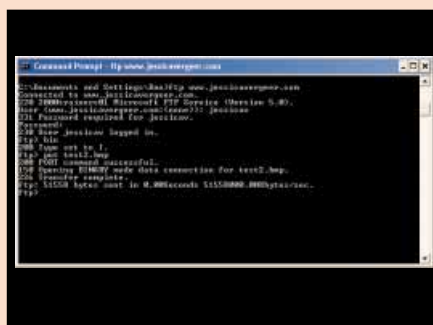
→ STEP-BY-STEP GUIDE

You can rely on FTP

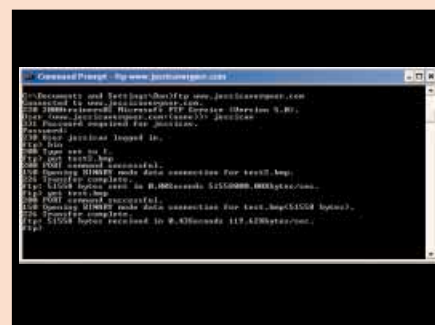
The command line FTP client is handy to know in a pinch



01 Open a command prompt. Type ftp followed by a space and the name of the FTP server. Press [Return] and type your username and password. For open FTP servers, use anonymous as the username and your email address as the password



02 To upload a file from your folder to the current directory on the server, type put followed by a space and then the name of the file to upload. Prior to uploading binary files (images, etc), type bin and press [Return] to switch to binary transfer mode.



03 To download a file from the FTP server, issue the get command, followed by a space and the name of the file. If you need to download a non-binary file, precede this by issuing the asc (ascii) command. To log off the server, type bye and press [Return].

the 'request timed out' can mean that the host you're trying to ping is not online, or that a communication problem exists between you and that PC. It could also mean that the computer you're trying to ping doesn't reply to ping requests – something not uncommon with many firewalls. So, don't automatically assume that a failed ping represents a complete failure.

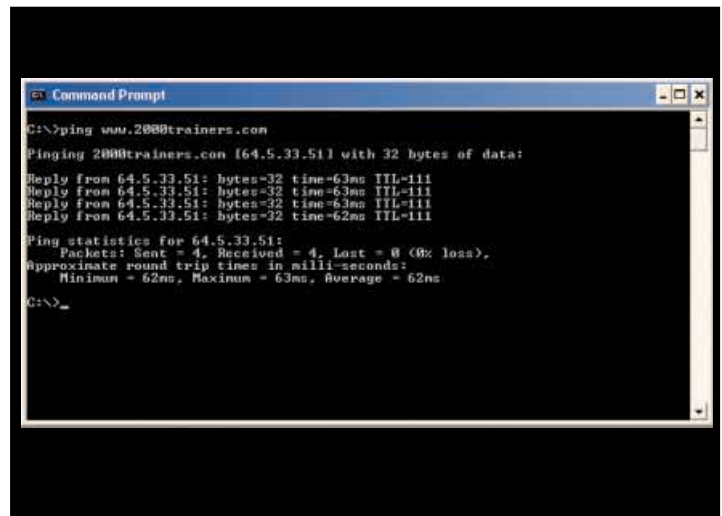
When it doubt, ping your way from the inside out: start by pinging your router's IP address, and then other PCs on your network or the Internet. If you don't receive any successful responses, there's a good chance that you're TCP/IP settings aren't configured correctly, or that a physical problem exists – is your network connection really connected?

Besides testing basic connectivity, ping has a couple of additional cool features up its sleeve. The first is the

ability to find the name associated with an IP address. For example, if you want to know the name associated with the address 64.5.33.51, just type `ping -a 64.5.33.51` and press [Return]. The name associated with the address will be supplied, and the ping will proceed. This trick is great when your firewall pops up a message

announcing that a user with a particular IP address on the Internet is attempting to connect to your system – usually an attempt to hack your system. If nothing else, getting the fully qualified name of the computer will enable you to determine the user's ISP, an important first step if you intend to report the hacking attempt.

Next, don't overlook some of ping's other options. For example, typing `ping -t` followed by a name or IP address will ping the target computer continuously. This is useful



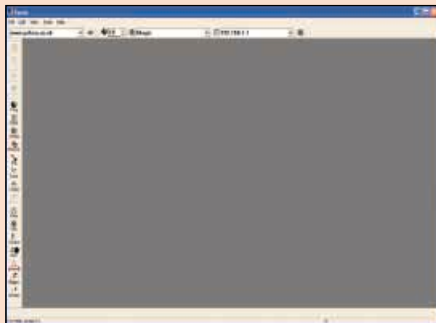
Ping is the most basic network diagnostic tool, and yet among the most useful

DON'T AUTOMATICALLY ASSUME THAT A FAILED PING REPRESENTS A COMPLETE FAILURE TO COMMUNICATE BETWEEN PCS

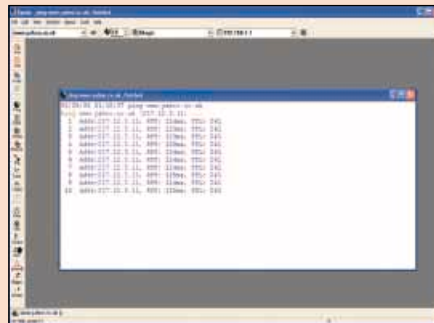
→ STEP-BY-STEP GUIDE

Digging with Sam Spade

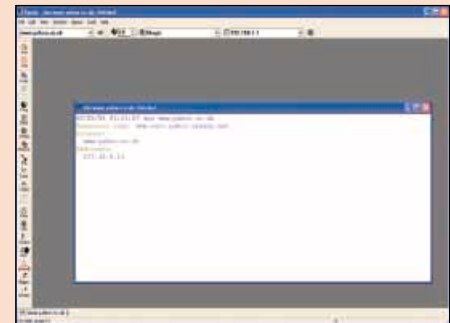
Trying to dig up the dirt on an IP address or domain name? Here's the scoop!



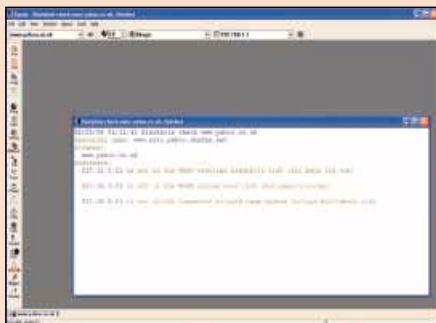
01 *Sam Spade* offers a variety of network tools. Once you type in an IP address or domain name, buttons and menu options become available. Enter an address in this box, like www.yahoo.co.uk.



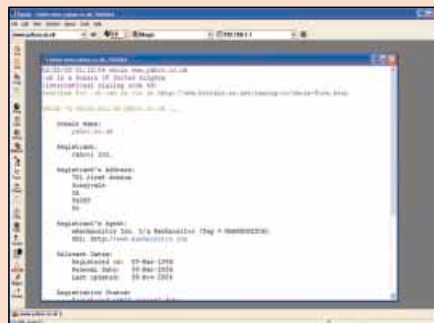
02 With the name of the computer entered, press Ping. This will ping the specified computer ten times. To trace the route to this same computer, click Trace.



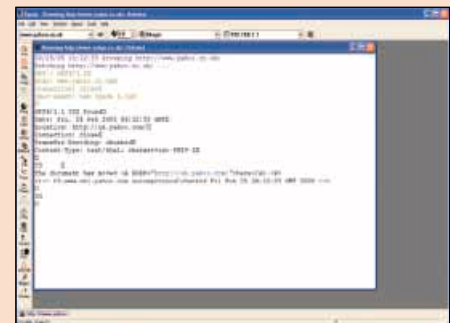
03 To obtain DNS information about the PC specified, click DNS. If you entered a name you'll see the associated IP address. If an IP address was specified, the computer's name will be shown.



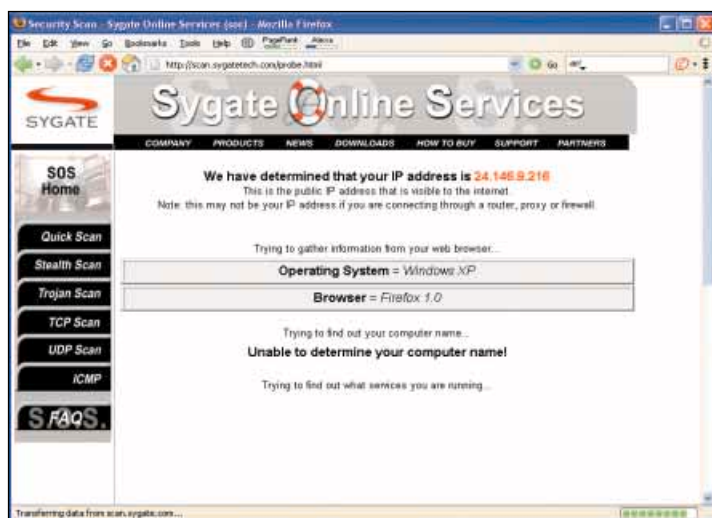
04 If you want to check whether the PC you've specified is part of any spamming blacklists, click RBL. You can also click the Abuse button to see if the computer has an abuse email address configured.



05 The Whois tool in *Sam Spade* will find and query the correct Whois server for you. Click Whois to obtain details on the domain name registration for the server name you've specified.



06 If the server name or address you've specified represents a Web site, click the Web button (and click OK when prompted) to see the source code associated with the site's home page.



An online port scanning tool can help you to test your firewall's security

when a PC cannot be contacted, or is experiencing connection issues. As soon as you see that your pings are receiving a reply, you should be able to connect to the computer in question. To end a continuous ping, just press [Ctrl] + [C]. To review other options available with the ping command, type ping /? and press [Return].

Take the Tracert path

Ping may be the old faithful of network tools, but you shouldn't overlook tracert, another command line tool. Where ping tests for basic connectivity between two systems, don't fall into the trap of thinking that not being able to successfully ping another PC indicates a problem with your computer or the system you're trying to reach. In fact, neither PC may be the source of the problem – it may lie somewhere in between.

In most cases, problems in between two computers (such as your PC and a Web server) are the result of router issues. For example, imagine a case where you can browse to certain Web sites, but not one in particular. When you ping the host, you receive no reply. You might assume that there's a problem with the server, but you can't say for certain with ping alone. The problem could be that a router or link between you and the server has failed or is experiencing problems, and this is where tracert comes in handy.

Tracert is similar to ping, except that it tracks the entire path between your PC and the destination computer you specify. For example, if you open a command prompt, type tracert www.yahoo.co.uk and press [Return], tracert will test all of the hops (routers) between your PC and the Yahoo Web

server. If the process stops at some point in the middle, you can usually say that it's a router issue. However, if the process stops at your router, it's likely that there's a misconfiguration problem at your end.

If you'd prefer to spice up your tracing experience, consider

NEED TO KNOW WHAT YOUR IP ADDRESS IS, OR IF YOUR NETWORK SETTINGS ARE CONFIGURED CORRECTLY? USE IPCONFIG

downloading a visual tracert equivalent like *NeoTrace Express*, available from www.neoworx.com. This tool not only traces the route travelled between your computer and your target, but also maps out the route on a geographic map.

Get set with Ipconfig

Curious as to what your IP address is, or if your network settings are configured correctly? If so, what you need in the ipconfig command. Accessed via a command prompt, typing ipconfig and pressing [Return] will display key information such as your network card's (or modem's) IP address, subnet mask and the IP address of your default gateway (your local router).

If everything is functioning correctly, the IP address and related settings that you configured (or that your ISP assigned) should be listed in your ipconfig output. If you see an IP address starting with 169.254 and no default gateway listed, that's your clue that something's amiss.

Specifically, an IP address of 169.254.xy means that your PC couldn't obtain an IP address

automatically from a DHCP server (usually your home network's router, or a server on a work network). This might be because the router is malfunctioning, its DHCP feature is turned off or that you're out of range on a wireless network. Regardless, you won't get far with this auto-configured address.

The first step you need to take in reconciling either issue is to issue the ipconfig /all command. This will display complete information about your network settings, including whether DHCP is enabled. If it is, your IP address is assigned automatically. If not, your address is defined manually. Either way, it's important to know which is in use, in case you need to make changes.

If you're using DHCP and haven't received correct IP address settings, type the command ipconfig /renew. This forces your PC to attempt to re-obtain an address from the DHCP server. If you have a laptop and frequently move between networks, it's possible that you've carried an address

domain name it has to be checked against Whois databases to be sure that the name is not already registered. If the name is available, it's yours for the taking.

Beyond registrations, Whois is also the definitive source of information about who owns and administers a particular domain. For example, do a Whois search for pcanswers.co.uk, and you'll learn that the domain is registered to Future Publishing. You can also find details like how long the domain is registered for, and often contact information (such as email addresses, names, addresses and phone numbers) for the owner.

This information can be used in a myriad of ways, from contacting the owner about purchasing their domain name through to addressing legal or misuse-related issues. Many domain owners now opt to have their Whois information hidden to protect their privacy. So while Whois will usually help you track down a domain's owner, it won't in all cases. To perform a Whois search for just about any domain name imaginable, visit www.uwhois.com.

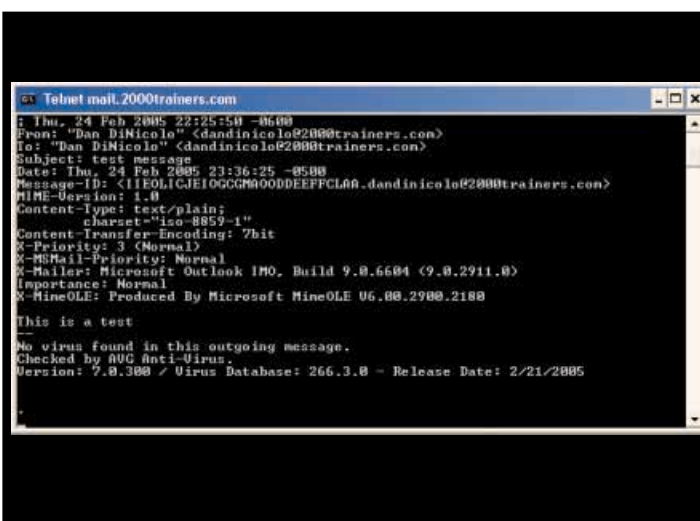
Use a network multi-tool

There's no question that tools such as ping, tracert and whois provide valuable information that will help you to troubleshoot network problems or gather more information. However, not all users are thrilled about either working from the command line or digging through the Web searching for details. So, if you're more inclined toward one-stop shopping, you may want to consider downloading a great free tool called *Sam Spade*, available from

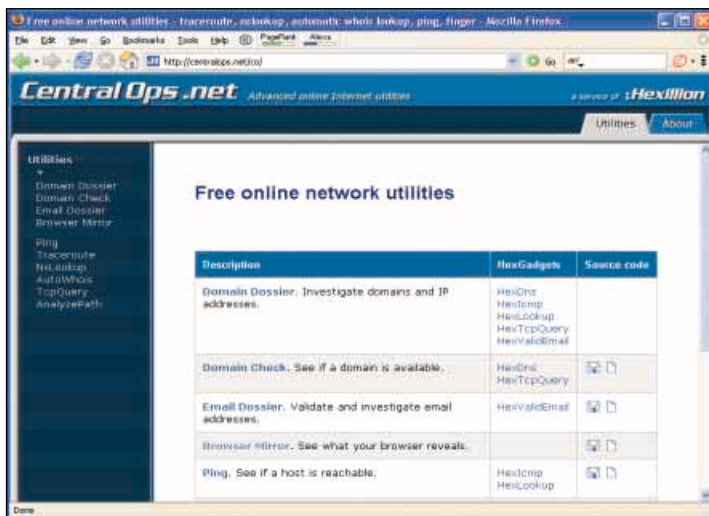
from one network to another. Issuing this command will help to ensure that you're using a valid address for the network you're connected to.

Ask yourself, Whois?

If you've ever registered a domain name, then you're probably already familiar with Whois, the database in which domain name registrations are stored. Before you can register a



If you ever need a surefire way to check your POP3 email, telnet always delivers



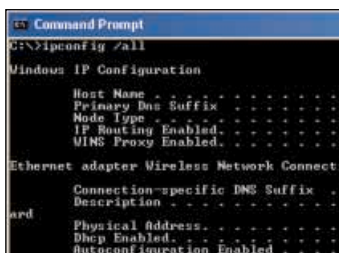
The Central Ops Web site (<http://centralops.net/co/>) provides access to free Web-based versions of many popular network tools

www.sampade.org/ssw/. This tool has been around for quite some time, but it's a keeper – it consolidates a number of the key network tools into one effective Windows program. For details on using *Sam Spade*, see the walkthrough on page 133.

Scan for ports

If you have a firewall installed, it's important to test whether it's working correctly. Specifically, you'll want to be aware of which ports (if any) it has open, listening for connection attempts from other PCs on your network or the Internet. What you need to perform this testing is a port scanner. This is a tool designed to scan your computer or firewall device for open ports to let you know which are open.

There's no shortage of free port scanners that can be downloaded from the Internet, but the easiest way to perform a scan is to visit any of the many online scanners available on the Web. Simply visit a site such as <http://scan.syngatetech.com> or www.auditmypc.com and follow the instructions to perform a scan. If you haven't explicitly opened any ports, your firewall should be blocking all connection attempts. However, it's still



Ipconfig is much more than a tool to determine your IP address

worth going through the scan process at least one a month, just to be on the safe side.

Speaking of Web tools, another site worth bookmarking is <http://centralops.net/co/>. This site provides Web-based access to a whole slew of popular network tools including ping, tracer and whois lookup. Starting a scan from this Web site is a great way to dig for more information, especially if you don't want tests and lookups originating from your IP address.

Not forgetting... FTP and Telnet

FTP and Telnet aren't troubleshooting tools, but these two command-line stalwarts can save the day in a pinch. FTP is used to transfer files from a PC to an FTP server, and you may already be familiar with graphical FTP client programs. However, if you're ever left with the need to FTP something from an computer without an FTP client (or FTP capable browser), you'll be happy to know your way around the command line version. The best part is that it's included with every version of Windows from 95 forward. For details on FTPing from the command line, see the walkthrough on page 132.

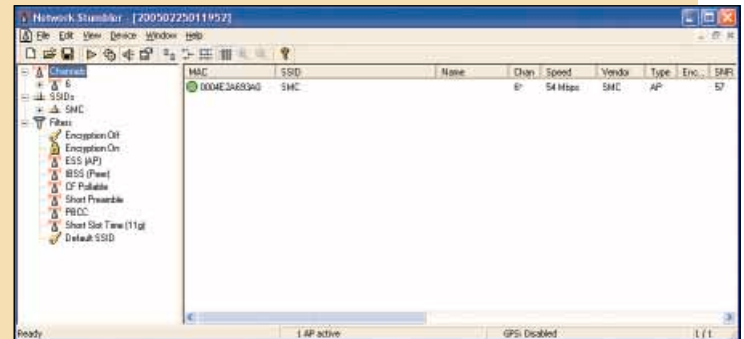
Telnet is another old school tool – think of it as the command-line precursor to popular current utilities such as Remote Desktop. While it isn't used by average users to connect perform command-line administration tasks anymore, it can still be a valuable asset and is again included with all versions from Windows 95 forward.

The benefit we're talking about is in using the tool to check your POP3 email when you're away from your email client and can't gain access to

→ FURTHER INFORMATION

Wireless stumbling

If you're concerned about wireless network security, use this utility to find out how safe you are



Network Stumbler is a great tool to test security on your wireless network

If you have a wireless network, then you may already be aware of how important it is to keep it properly secured. If you neglect this important undertaking, it can be incredibly easy for any other wireless users within range of your network to connect to it and snoop around. The worst part of this scenario is that any such user is directly connected to your network, having circumvented your firewall and other Internet-protection mechanisms that you may have in place.

To be on the safe side, the tool that you need to download and install is *NetStumbler*, which is available from

www.netstumbler.com/downloads/. This utility will scan for all wireless networks within range and give you the low-down on your security setup. Is DHCP enabled? Is your SSID being broadcast? Are you using WEP rather than WPA? Is MAC security enabled? *NetStumbler* has the answers and provides the information you need to start getting your wireless network properly secured.

Don't be surprised if the tool locates other wireless networks beyond just yours. *NetStumbler* is looking for any wireless networks in range, so you may just be surprised by what it will find.

your mailbox via Web mail. If you find yourself in this situation, you can telnet into your mailbox from the command line and use this method to check and read email messages. This is especially useful when you need to check your email over a painfully slow Internet connection – there's just not much that's faster than limiting your connection to plain text transfers.

To access your email inbox via telnet, open a command prompt, type telnet pop3.myserver.com 110 and press [Return]. The server name you supply should be the name of your ISP's POP3 mail server, and the 110 represents the port used to connect to the POP3 service on the server. Once connected, you'll be presented with a basic welcome message.

The first thing you'll need to do is log on. To do this, type user (followed

by a space) and then your email address. Press [Return] and then type pass, add a space, and then type your email password. Press [Return]. If you get a +OK message on both fronts, you've logged in successfully. Next, type list and press [Return]. The numbers that follow will list the number of messages in your inbox, follow by their size in bytes. To view the first message, type retr 1 and press [Return].

After reading the message, type list to return to your list, and then type retr followed by the number of the next message you want to read. If you want to delete a message (telnet is also a great way to delete large junk email messages without downloading them), type dele and press [Return]. To end your telnet session completely, simply type quit, press [Return], and you're done! ■



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Patches & updates

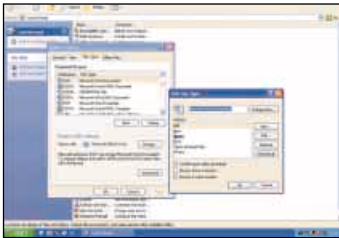
Don't miss out on the Critical Updates provided by Microsoft. Visit Windows Update at <http://windowsupdate.microsoft.com/>

CRITICAL

Vulnerability in Microsoft Office XP could allow remote code execution (873352)

Microsoft Office XP, SP2 and SP3/ Microsoft Word 2002/Microsoft PowerPoint 2002/Microsoft Works Suite 2002, 2003 and 2004

A buffer overrun vulnerability exists in *Microsoft Office* and *Works Suite* applications that could allow an attacker to acquire the same privileges as the logged-on user. To exploit this vulnerability, a victim would have to visit a Web site containing the malicious code with inadequate browser security. *Internet Explorer* is configured by default to prompt the user to open or save a document, but in some circumstances



To ensure Microsoft Office and Microsoft Works docs don't open without user-interaction, edit File Types in Folder Options

this feature may have been inadvertently disabled. To make the necessary changes in Windows 9x, launch Windows Explorer and click View -> Folder Options. In Windows 2000/XP, Folder Options is accessible via the Control Panel. Switch to the File Types tab, select DOC and press Advanced. Place a tick in 'Confirm open after download' and disable 'Browse in same window' and click OK.

Microsoft has provided a patch and further information under Microsoft Security Bulletin MS05-005 www.microsoft.com/technet/security/Bulletin/MS05-005.msp.

CRITICAL

Vulnerability in PNG processing could allow remote code execution (890261)

Windows Media Player 9 Series/ Windows Messenger version 5.0/ Microsoft MSN Messenger 6.1 and 6.2/Microsoft Windows 98, 98 SE and Me

A remote code execution vulnerability exists in Windows Media Player, Windows Messenger and MSN Messenger where an attacker could take full control of a system. This could only be achieved if the user was coaxed into clicking a link on a Web site, or in a HTML email, containing a malicious PNG file. To reduce the risk in Windows Media Player (WMP), remove the ActiveX Control via Internet Options -> General -> Settings, press View Objects and delete the WMP ActiveX. Disable .NET alerts in Windows Messenger via Tools -> Options -> Privacy and tick 'Don't download any tabs to my computer'. MSN Messenger restrictions can also be applied for added protection. Click Tools -> Options -> Personal and clear the Show Display Pictures box. Emoticons can also be disabled on the Messages tab.

Microsoft has provided a patch and further information under Microsoft Security Bulletin MS05-009 www.microsoft.com/technet/security/Bulletin/MS05-009.msp.

CRITICAL

Vulnerability in Server Message Block could allow remote code execution (885250)

Windows 2000 SP3 and SP 4/ Windows XP SP1, SP2, 64-bit Edition SP1 and Version 2003/Windows Server 2003

A vulnerability exists in the Server Message Block (SMB) that could potentially allow an attacker to execute malicious code remotely and take full control of an affected system. The best means of defence is to run an adequate firewall with TCP ports 139 and 445 blocked.

Microsoft has provided a patch and further information under Microsoft Security Bulletin MS05-011 www.microsoft.com/technet/security/Bulletin/MS05-011.msp.

→ WEB RESOURCES

Security updates and patches

Unless you're online when the vendors release their updated definitions, you could lose out

PROGRAM	WEB SITE
Adaware SE 1.05	www.lavasoft.de/
AntiVir Personal Edition 6.29.00.03	www.free-av.com/index.htm
Avast Antivirus 4.5	www.avast.com/i_kat_69.html
AVG Free Edition 7	www.grisoft.com/us/us_updt6.php?avg6=fe
AVG 7	www.grisoft.com/us/us_updt7.php?type=avi
BO Clean 4.11	www.nsclean.com/update.html
F-Prot	3.1.6a http://www.f-prot.com/download/home_user/
IE-Spyad	www.staff.uiuc.edu/~ehowes/resource.htm
Kaspersky Antivirus 5.0.227	www.kav.ch/
Mailwasher 4.1.9	www.mailwasher.net
McAfee Virus Scan 6/7/8	http://download.mcafee.com/updates/updates.asp
Norton Antivirus All	www.sarc.com/avcenter/download.html
NOD32 2.12.1	www.nod32.com/support/info.htm#CurVersion
Norman Antivirus 5.70.09	www.norman.com/virus_info/virus_info_new.shtml
Panda Antivirus Titanium	www.pandasoftware.com/download/updates/hact_sinent.asp#uno
Sophos Antivirus 3.78	http://www.sophos.com/downloads/ide/
Spybot Search & Destroy 1.3.6	http://security.kolla.de/
Spyblocker 8.4	www.spyblocker-software.com/spyblocker/sb.shtml
Spyware Stopper 7	www.spyware-stopper.com/spystop/index.shtml
Spyware Blaster 3.2	www.wildersecurity.net/spywareblaster.html
Tauscan 1.7	www.agnitum.com/products/tauscan/dat.html
TDS-3	http://tds.diamondcs.com.au/index.php?page=update
The Cleaner 4 Build 4250	www.moosoft.com/thecleaner/updates.php
Trend PC-cillin All	www.trendmicro.com/download/pattern.asp
Trojan Hunter 4 Build 890	www.misec.net/support/trojanhunter/updates/
Trojan Remover 6.3.4	www.simplysup.com/tremover/update3.html

CRITICAL

Vulnerability in Hyperlink Object Library could allow remote code execution (888113)

All Windows versions

An unchecked buffer vulnerability exists in the way hyperlinks are handled, which could potentially allow an attacker to execute code remotely. The attacker would have to persuade the user to visit a Web site containing malicious code or via a HTML email. Reading email in plain text reduces the risk and this can be achieved in

Microsoft Outlook via the Registry Editor. Click Start -> Run and type regedit and press [Enter]. Navigate to HKEY_CURRENT_USER\Software\Microsoft\Office\10.0\Outlook\Options\Mail and create a new DWORD 'ReadAsPlain' with a value of 1. In *Outlook Express*, click Tools -> Options -> Read, and tick 'Read all messages in plain text' and click OK.

Microsoft has provided a patch and further information under Microsoft Security Bulletin MS05-015 www.microsoft.com/technet/security/Bulletin/MS05-015.msp. ■

On the CD

THIS MONTH

- Construct powerful database applications
- Clear out all the rubbish that your Internet browsing leaves behind
- Add watermarks to your digital images and keep them safe
- Get started with Windows XP Home



TREVOR WITT
CD Editor

If you have a query about using your disc's interface or its content, please visit our reader support Web site at www.futurenet.co.uk/support/ where you can find solutions to many common problems. If you're still experiencing difficulties, then please email our reader support team (support@futurenet.co.uk) for further assistance, or call 01225 442244 and ask for CD support.

→ SECTION CONTENTS

FloorPlan 3D v7.3

DIY is something many of us spend our weekends doing. How many times have you started something only for it turn out totally different to what you'd planned? With FloorPlan 3D you can see how it will look before you begin

PAGE 137

Alpha Five v6 Trial

Create your very own desktop and Web-viewable database applications without having to spend months learning how to write code. Try out the free trial before getting the full version next month

PAGE 138

Complete Internet Cleanup Pro

If you use the Internet regularly your PC will soon fill up with unwanted data. You could spend time cleaning this out, or you could use Complete Internet Cleanup Pro instead

PAGE 140

iWatermark

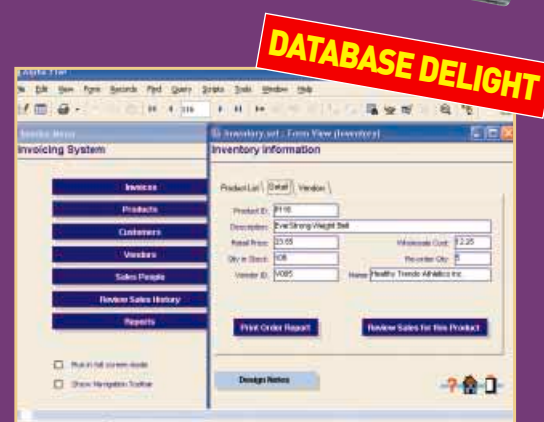
With more of us taking digital photos and emailing them around to our friends, or putting them on the Web, retaining ownership of your images can be hard. If this is the case, add your own watermarks

PAGE 142

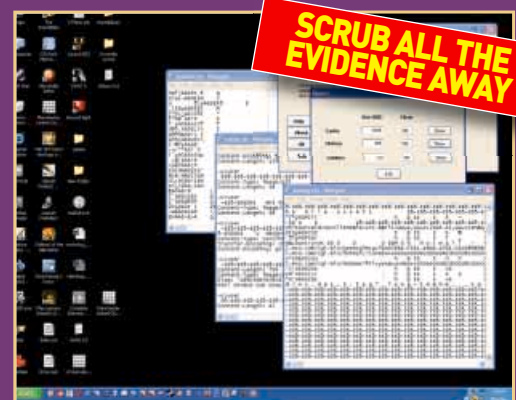
Keystone Learning

If you've never used Windows XP before, it can be a little daunting. This video, Windows XP Home Level 1, will help you get started

PAGE 142



'Alpha Five aims to bring databases to the masses, in an easily accessible form'



'Long gone are the days when you could leave your PC's ports open while you trawled the Net'

→ PUBLISHER: IMSI CONTACT: WWW.IMSISOFT.COM

SUPPORT: WWW.IMSISOFT.COM/SUPPORT/FLOORPLAN/

SYSTEM REQUIREMENTS: CPU 200MHZ OR FASTER, 96MB RAM MINIMUM, WINDOWS 98 OR LATER, INTERNET EXPLORER 5.5 OR LATER LIMITATIONS: NONE – FULL PROGRAM

IMSI FloorPlan 3D 7

Have all those property TV shows given you ideas for a building project of your own? FloorPlan 3D has all the tools you need

FloorPlan 3D is a fairly straightforward program, but may initially seem confusing if you're unfamiliar with CAD packages. These concerns soon disappear once you've learned a few basics and the best way to do that is by designing a building from scratch. Follow our guide and you'll be using FloorPlan 3D with confidence in about half an hour.

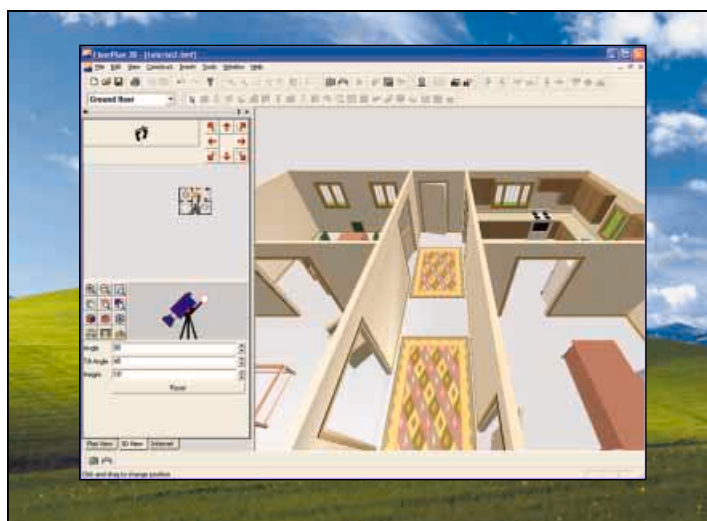
Start with a shell

To create a shell, launch FloorPlan 3D, click New, then select the Plan View tab. The program starts by offering you a selection of general walls, so click whatever type you'd like for the outside of your building. Now click in the workspace to the right and move the mouse to begin drawing a wall. Click again to end one wall and start another. Move the final wall close to the first and FloorPlan 3D will join them automatically. Press [Esc] if you've finished drawing. If you're not happy with the position of a wall, click it and move it left or right, and FloorPlan will automatically redraw the other walls to match. You can also press [Del] to delete the currently selected wall.

Add a few internal walls and you've got the start of a building design, but to make it practical you'll need more – such as doors to enter each room, for instance. A few windows might be handy, too. Select Construct -> Doors for a start, and pick one you'd like as the front door. Now move your mouse cursor over a wall and FloorPlan 3D will highlight its position. Click the left mouse button to add your chosen door to the plan. Repeat the process to add some sliding doors to the rear of the building, and internal doors between the various rooms. It's all very straightforward, and picking a few windows follows the same procedure.

Come in closer

Click the 3D View tab for a closer look at what you've built so far, then select View -> Render Mode -> Rendered to improve the image quality. Click the miniature plan view on the left-hand side of the screen to reposition the camera, then drag to rotate it left or right. Once you've found a view that you like, use the walkthrough arrows to step backwards and forwards, left or right, through the building. If this



Floorplan 3D is a very useful tool – once you've got the hang of it

seems like it's too much hassle, click the Walk State button (it has an icon of two bare feet) to switch to FloorPlan 3D's View State. Now you can use the various View State arrows to jump straight to particular views in a single click.

The camera orientation is displayed in its own window beneath the miniature building plan, and you can also customise its view from

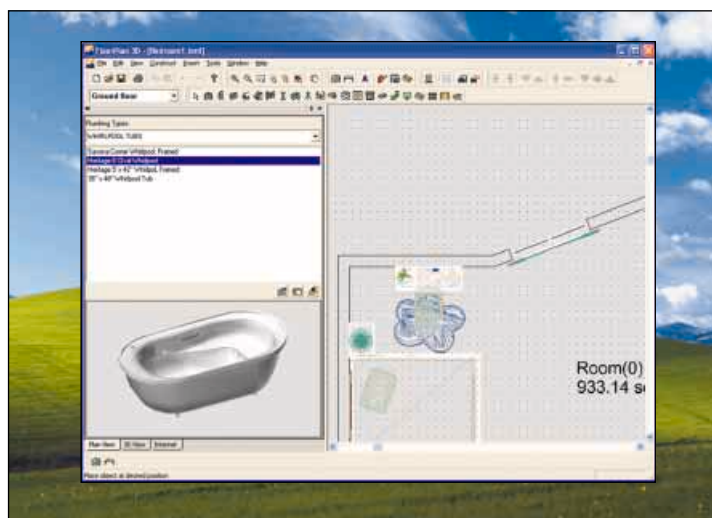
furnish your house, then check to see what's on offer in the other sections (Insert -> Plumbing to create a bathroom, Insert -> Appliances for a kitchen, and so on). Once you've completed the house, don't forget the garden. The Insert -> Site Information section has landscaping features (rocks, plants and so on), while the Construct menu has options to create a drive, fences, gates and more.

SPEND A LITTLE TIME WORKING ON IT AND YOU SHOULD BE ABLE TO COME UP WITH A STYLISH DESIGN

there. If you have a particular view you'd like to save for reuse, click View -> Save View (use View -> Restore View to recall it).

Now it's time to create the interior. Click back to Plan View and select Insert -> Furniture. Pick the tables, chairs and other objects to

Spend a little time working on this and you should come up with a stylish design, but how can you share it? One way is to save images (View -> Save View As), or you can export the file in AutoCAD's DXF format, which is ideal if you want to show your ideas to an architect, for example.



You don't have to use FloorPlan 3D to build a complete house, of course – it's just as helpful when you're looking at renovating a single room

→ UPGRADE

The latest version of FloorPlan sees major new features, such as the ability to open multiple views of the same drawing. This ends the artificial split between plan and 3D view, as you can now work in 2D, and see the results in 3D at the same time. Automatic object height adjustment and new collision detection algorithms are further improvements.

The program uses metric throughout, includes an easy-to-use symbol navigation tree, and now provides a library of 1300 3D objects to dress your finished design. This already powerful feature set is boosted in the new FloorPlan 9 Professional by the inclusion of TurboCAD 9.2 Deluxe and the official IMSI 2D Coursebook to get you up to speed.

You can save even money off these products with our special offer. Order FloorPlan 9 for only £20 (usually £30), and FloorPlan 9 Professional for £40 (usually £50). Both prices include shipping and you can order by calling the sales line on 01752 895 100 and quoting the promotional code 504FP9ANS.

→ PUBLISHER: ALPHA SOFTWARE CONTACT: WWW.ALPHASOFTWARE.COM
 SUPPORT: HTTP://WWW.ALPHASOFTWARE.COM/SUPPORT/DEFAULT.ASP
 SYSTEM REQUIREMENTS: WINDOWS 98, ME, 2000, XP
 LIMITATIONS: 30-DAY TRIAL VERSION

Alpha Five v6

Create your own powerful database applications without learning a programming language

The idea of creating a database is enough to instill fear into the heart of even the hardest of computer user. Add the notion of creating database-driven Web applications and many people will simply walk away. *Alpha Five* aims to bring databases to the masses, in an easily accessible form that everyone will appreciate. While the software bears a close resemblance to the likes of *Microsoft Access* and *FileMaker Pro*, it's been designed to cater brilliantly for the expert database programmer and novice alike.

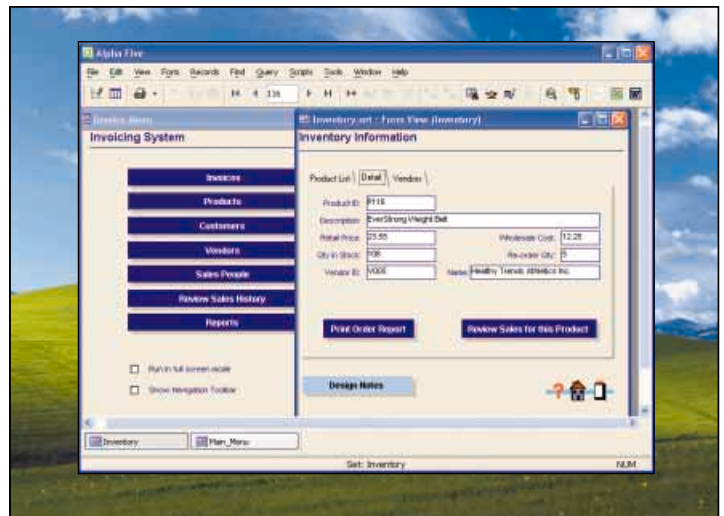
IT HAS BEEN DESIGNED TO CATER BRILLIANTLY FOR THE EXPERT DATABASE PROGRAMMER AND NOVICE ALIKE

Database packages have a tendency to be either too complicated for the average user to get to grips with, or lacking in powerful features, limiting the scope of projects. *Alpha Five* manages to stand out from the crowd by planting itself firmly in between these two extremes, and it makes no compromises.

Even if you've never looked at a line of code in your life, this isn't an obstacle to getting started with *Alpha*

Five. The program uses its own take on the familiar wizard in the form of Genies to help guide you through various processes. Previously complex tasks such as creating a relational database and linking to external data sources are brought within the reach of the average computer user. Support for MySQL, Oracle, ODBC, DB2 and SQL Server means that *Alpha Five* is going to cater for all eventualities, and the XBasic scripting language (*Alpha Five*'s version of Visual Basic) makes it possible to generate powerful scripts and macros in next to no time.

Using the program's Web Application Server, it's possible to transport a database you've created from your computer to the Internet. This can then be used to create database-driven Web sites, making sophisticated data retrieval and entry techniques possible. Yet the program is equally strong when it comes to creating standalone applications. After using the Genies to create your tables, you can then set about the task of



The supplied sample databases give you an idea of the power of the program

designing forms in a friendly WYSIWYG environment. After creating your interface, adding buttons and menus, and so on, you can use XBasic scripts to apply properties to various elements so that buttons respond accordingly when they're clicked.

While much of the scripting is carried out in the background for you, you do have the option of viewing the code and editing it by hand to make your own amendments. The point-and-click approach to database creation means that new users are not going to be put off by coding, while more seasoned database creators will be astonished at just how quickly they can get things done.

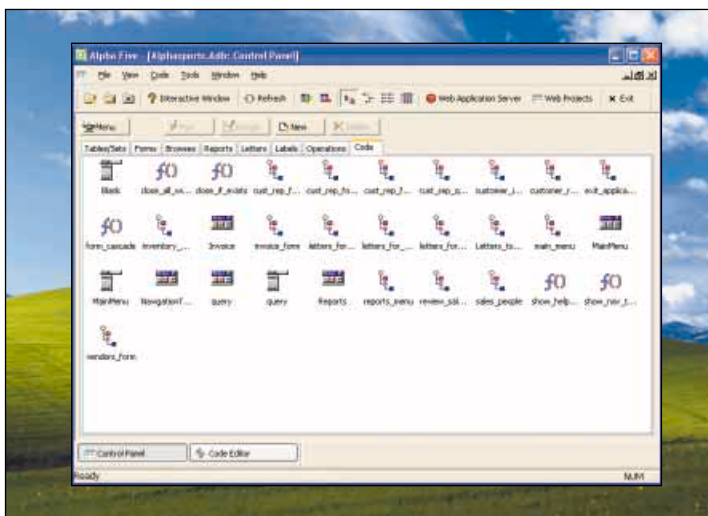
Sample the samples

Alpha Five comes complete with a number of sample databases, and these serve a couple of purposes. As well as demonstrating just what the program is capable of producing, they

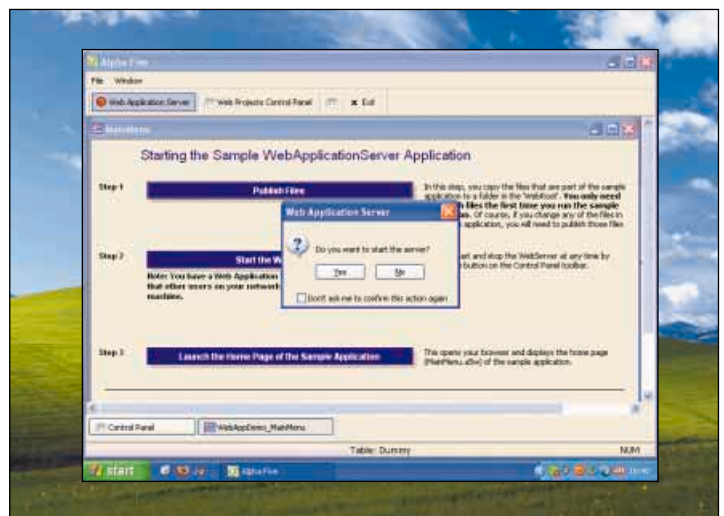
also act as a wonderful learning tool. If you see a feature of one of the sample databases that you'd like to apply to one of your own, you can copy the relevant code and modify it to suit your needs. As you become more proficient with coding, you may want to make use of the Code Library that can be used to store snippets of frequently used code so they can be accessed quickly in the future.

Genius

It's *Alpha Five*'s Genies that really make the program so instantly accessible. In a matter of minutes you can be guided through the process of designing a database, building all the necessary tables and creating the links that will enable data to be called up. When it comes to working with information that you've added to your database, the Genies again come up trumps, helping you to build complex queries and design reports with a



Alpha Five's control panel provides easy access to all of the components that go into making up your database



Alpha Five v6 smoothly guides you through the process of designing a database, building tables and creating links

minimum of effort. Data validation rules can also be created in the same way. These validation rules can range from the basic (such as ensuring that a date is entered in the correct format, for example) to the more sophisticated, (such as making some fields necessary while others may be left blank, and creating conditional rules based on lookups). Producing similar results in other database packages can be an arduous task requiring in-depth coding knowledge, but with *Alpha Five* it's all taken care of for you.

If you're creating a database that's going to be used by several other people, or if you just want to make things easier to use, you have the option of creating your own menu system to aid with navigation. By designing your own custom interface you can provide quick and easy access to various components of your database, such as printing invoices or

displaying a list of orders. You can also take advantage of *Alpha Five*'s security options to grant different levels of access to the database to different people. This can be used either as a standard security measure or as a means of ensuring that users don't become confused by having access to elements that don't concern them.

Generate reports

When it comes to generating reports – one of the most used features of any database – you have a number of options available to you. Reports can be saved in a variety of formats including rich text, plain text, PDF or even HTML. *Alpha Five*'s support for HTML doesn't just extend to reports: it can also be used when you're designing forms. This means that a database designer can use familiar code to create their personalised interfaces and forms can be easily made to match up with an existing

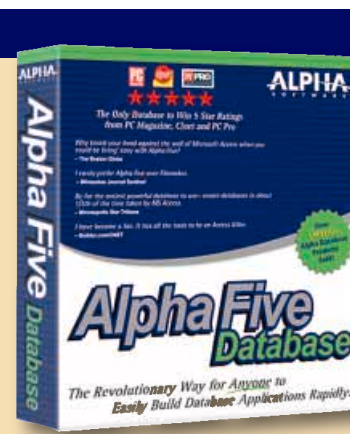
Web page design. Again, this can be achieved either by hand or by turning to a Genie. Support for Cascading Style Sheets ensures that designs can be updated easily in the future.

Whether you have an existing database or if you are starting from scratch, after spending just a short time working with *Alpha Five* you're

bound to discover just how much it can help you to manage your data. From simple address books to more complex customer databases, the program provides you with all the tools you need to create a powerful and professional database that can be constantly amended as your needs change.

→ UPGRADE

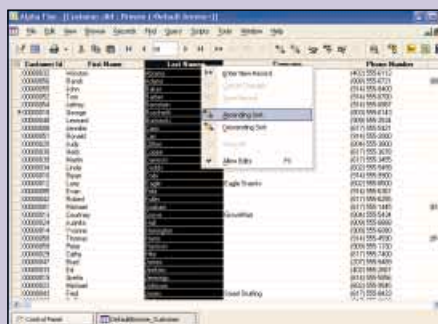
If you want to get your hands on the full version of *Alpha Five v6*, then you're in luck. We've secured an £80 discount on the RRP of £199. Readers of **PCAnswers** can buy the program for £119: go to the ALPHA Software Web site, go through the standard purchase process and enter a5pcanswers into the Add coupon box. The discount will be applied automatically.



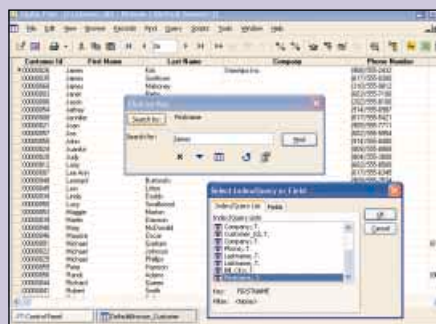
→ STEP-BY-STEP GUIDE

Sorting your data with Alpha Five

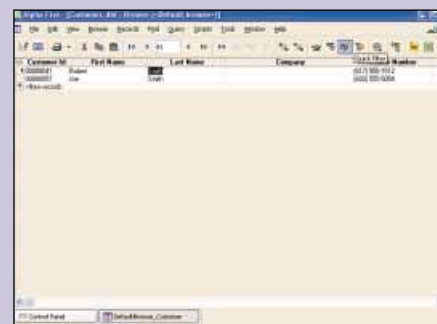
There are several techniques you can use to display data



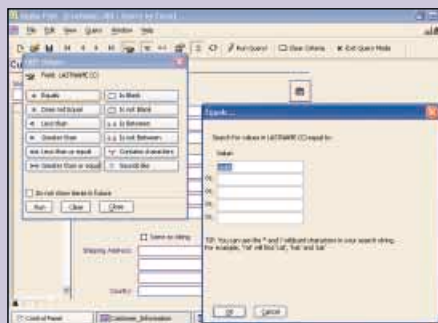
01 When you create a table to store all of your records, they'll be displayed in the order in which they were entered. Using the Quick Sort option is a quick way to sort information usefully.



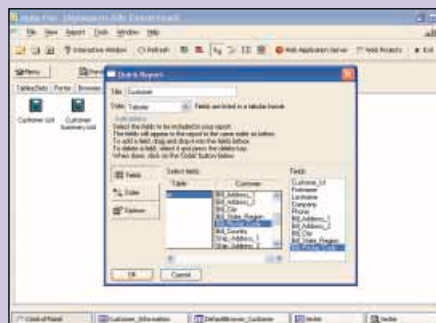
02 The Find By Key function is handy. Click it's toolbar button, then the Search By button. Select the field you want to query, click OK, enter your search term and click Find.



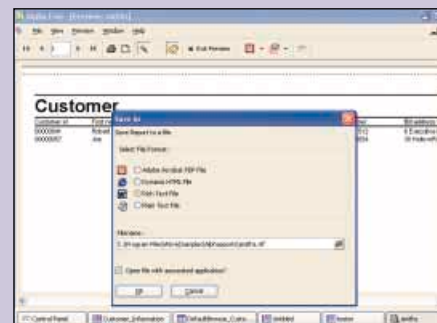
03 To track down all records that contain a particular value, place your cursor on a record containing the value you're interested in and click the Quick Filter button.



04 In Form view you can conduct queries. Place the cursor in the field you want to query and click the Query By Form button. You can use the QBF Helper to build up complicated search criteria



05 To create a report of queried info, click the Reports tab of the Control Panel, right-click a black space and select New. Select the data source you want to use and the Use Quick Report option.



06 When you run a report, it's displayed in Print Preview mode and then you can print or save your document. Click File -> Save As and choose the format you would like to use for your report.

→ PUBLISHER: PC MESH CONTACT: WWW.PCMESH.COM

SUPPORT: WWW.PCMESH.COM/FORUM/INDEX.PHP SYSTEM REQUIREMENTS: IE 5.0 OR LATER, WINDOWS 98/ME/2000/XP LIMITATIONS: NONE

Complete Internet Cleanup Pro

Put away the bleach! There's no need for a mop. Use this tool to clean away Net traces instead

One of the sad signs of the times is that you're forced to buy anti-virus software, anti-spyware apps, password-protected locking mechanisms, firewalls and encryption apps to hide you away from the world while logging on to the Internet, all because it seems to be a one-stop shop for computer nasties. Long gone are the days when you could leave your PC's ports open while you trawled the Web for all things useful. Now you need to have your PC locked down more securely than Fort Knox and the Tower of London combined.

You'll want to make sure that you leave no evidence behind whenever you step outside the safe-haven of your firewall. Happily, we've managed

to round up a full version of the award-winning *Complete Internet Cleanup Pro* utility from PC Mesh for our cover disc. It'll effectively destroy all your online tracks (to stop third parties using your browsing habits as marketing data), reclaim hard disk space by wiping out unneeded temporary files, and will stop other folk who use your PC knowing what you've been looking at.

One peek into your data reveals an awful lot

If you know where to look you'll be amazed at just how much stuff gets left on your PC after you've done some quick Web searches. To the trained eye this is a wealth of data waiting to be explored and it can shed a light on

what you're like. Of course, people who know what to look for could find even more useful information. This could include passwords, Web site logins and bank details. That's why you need something like *Complete Internet Cleanup Pro* if you want to protect yourself – and your computer.

You see, deleting files that are left on your computer after a quick surf just isn't as easy as emptying documents into a Recycle bin, for example. To do it properly, you need the right equipment.

Erase the past if you want to sit comfortably

Unless you get rid of all the cookies, and other files that get left behind every time you log off, someone could get their hands on some rather juicy information if they were to gain access to your PC. If this sounds a little far fetched, a more pressing reason to clean up after yourself is that you may find someone has got access to your PC without even breaking into your home. Furthermore, do you really want to be bombarded with pop-up ads every time you go online? These can often be very unsavoury, especially if you have children using your PC.

Complete Internet Cleanup Pro is very easy to use and doesn't need any

configuring in order to make your PC safe. Once it's installed simply check all the boxes relating to the scans you want it to run and then sit back as it scrubs your PC clean like a code-scouring brush. Although it's called *Internet Cleanup Pro*, it'll also give Windows a bit of a scrub, so you can be safe in the knowledge that it's sparkling clean, which may help you sleep at night.

→ UPGRADE

A 35 per cent discount is available if you decide to purchase PC Mesh's 'All Products Pack'. To claim your discount browse to: <http://secure.emetrix.com/order/dc.asp?PID=12095612> and enter 2fpm2005jan as the discount code. Furthermore, you lucky readers, a 20 per cent discount is available if you decide to receive 12 months of free upgrades for *Complete Internet Cleanup Pro*. To order, browse to: <http://secure.emetrix.com/order/dc.asp?PID=8792959> and enter fpm2005jan as discount code.

→ AT A GLANCE

Clean up with Cleanup

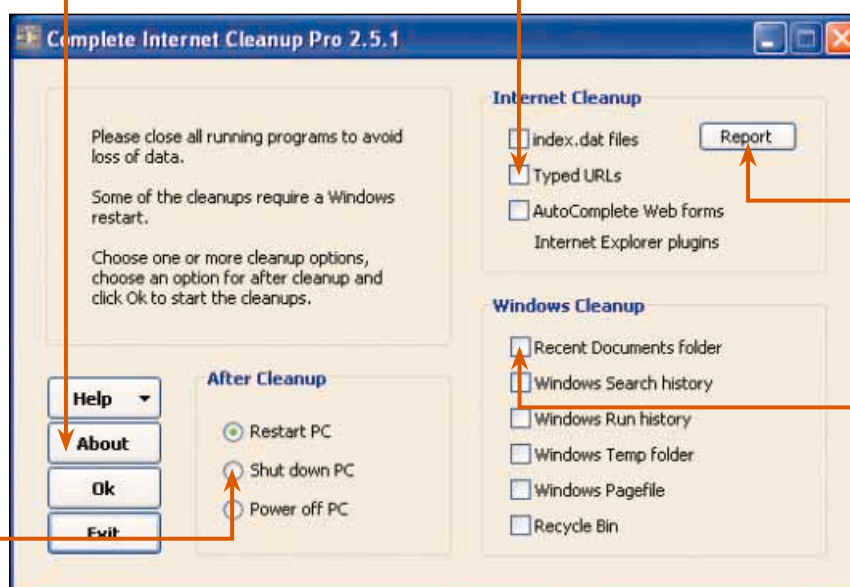
Get to grips with your options

HIT IT

If you've customised the clean criteria to your meticulous heart's content, just click the OK button to start the utility.

REBOOT OR SHUTDOWN?

It can be a time-consuming process, so if you don't want to watch over the entire shebang, tell it what to do with your PC once it's finished.



FILE TYPE

Here's where you can choose which type of files you wish to clean up. If there's a record of your browsing you want to keep, you don't have to erase it all.

SCRUPULOUS DETAIL

Take a look at your cache, history or cookie files from here. Handy for those before and after comparisons.

WHERE TO LOOK

You've chosen what to clean, now specify where, with options including oft-uncleared locations such as the Recycle Bin, Pagefile and Temp folder.

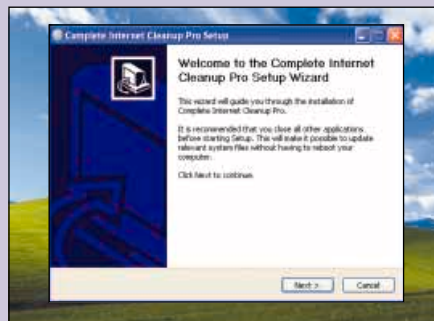
→ STEP-BY-STEP GUIDE

A-Z of Complete Internet Cleanup Pro

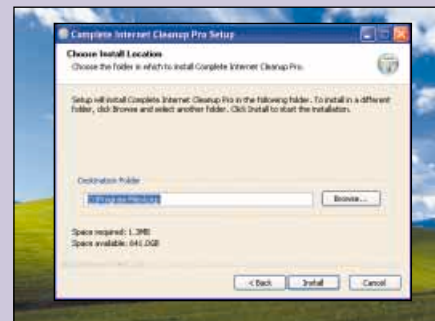
From installation to spotless and sparkling



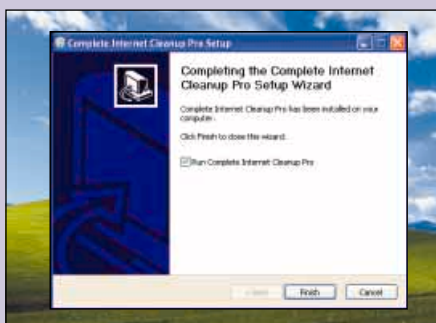
01 You need to install *Complete Internet Cleanup Pro* – you'll find it in the Full Software section of disc one. When installing, Windows may worry that it doesn't know what the application is – ignore it, and just click OK.



02 From here a wizard will guide you through the installation process, after asking you to close all other applications. You'll also need to agree to the application's terms and conditions before the program will install on your computer's hard drive.



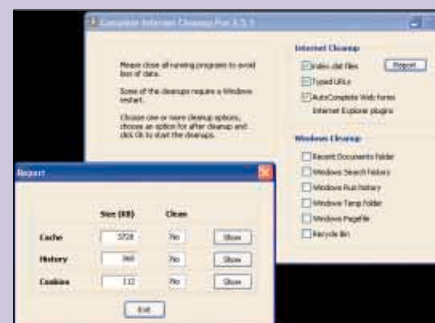
03 As with most apps, you'll be asked to specify a destination folder for the installation. Click the Browse button to look through your computer files manually, or type the destination in straight off. The utility takes a tiny amount of space to install – just 1.3MB.



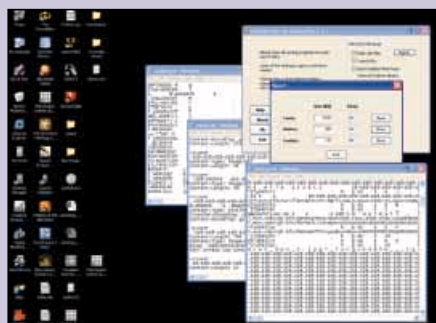
04 Once the wizard has completed its run, you should see the screen above. The utility has installed correctly and successfully. From here, click the Finish button to launch *Complete Internet Cleanup Pro* and an icon will automatically be placed on the desktop.



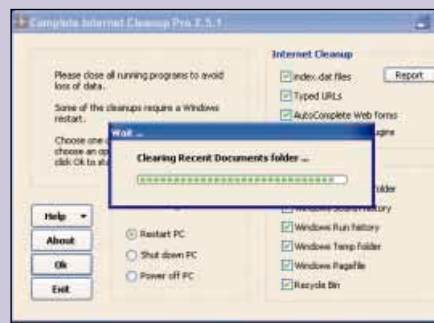
05 When open, you'll see three options in the main program box. Choose which one you want from Internet Cleanup, Windows Cleanup and After Cleanup. These options decide what to look for and where, and what to do when it's finished cleaning. Click OK to run the program



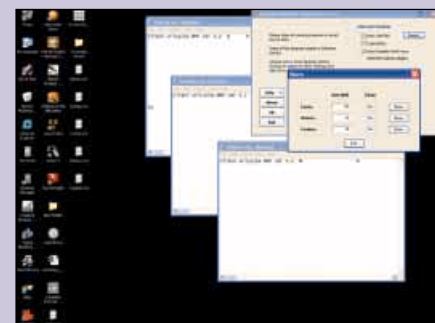
06 Before you start using *Complete Internet Cleanup Pro* to clear out your Internet history, you may be interested to have a gander at what's actually being stored on your computer. Click the Report button to bring up another box of tricks.



07 You can see if your cookies, history and cache have been cleaned, and how much space each file is taking up in your memory/hard drive. Click the Show button to display a Notepad document full of garbled Internet-ese, some of which, such as URLs, is readable.



08 When you've finished looking at your cache, cookies and history files, you can return and prepare yourself to clean. Double-check the ticked options and, when ready, click the OK button. The app is very quick, and should briefly show a pop-up box, before restarting your PC.



09 After your computer has re-booted, you can launch the utility again and have a look at your new file sizes in the Report section of the app. As you can see above, the Notepad files have been cleared of gobbledygook and the files are labelled clean.

→ **PUBLISHER:** SCRIPT SOFTWARE **CONTACT:** WWW.SCRIPTSOFTWARE.COM
SUPPORT: WWW.SCRIPTSOFTWARE.COM/SUPPORT/
SYSTEM REQUIREMENTS: WINDOWS 98 OR HIGHER **LIMITATIONS:** NONE - FULL PROGRAM

iWatermark

Protect your online images simply by adding a digital watermark

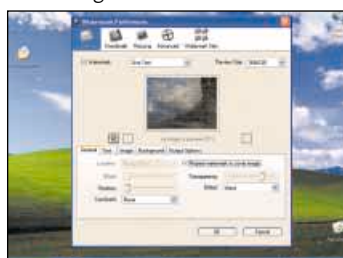
If you own a digital camera, you may want to add photographs to your Web site. However, once these images are on display to the world, how can you prevent visitors from downloading them and using them on their own sites? While it's possible to use various scripts to prevent image downloads, watermarking is proving to be a far more popular method.

The fact that your images have your name stamped on them greatly reduces the likelihood that someone else will try to pass them off as their own. Adding a watermark to an image can be as simple or as complex as you like – from a simple text overlay to

more elaborate effects. You can do this by hand, but it takes a long time if you're working with a lot of photos.

This is where *iWatermark* can help. The program can add text or graphical watermarks to entire folders of images in one go. *iWatermark* also works with all popular image formats including JPEG, TIF and BMP. In addition, the program can automatically generate thumbnails of all of your watermarked images – a great option if you want to create an online gallery of your work. No matter what you do, the EXIF information attached to digital photographs will remain intact.

The watermarks you can add are incredibly customisable – they can be placed anywhere on your images, rotated, made semi-transparent, and you can use special effects such as embossing and shadows.



Use *iWatermark's* preferences screen to configure how your watermark will look



To watermark your images, simply drag your source and destination folders into place and click Process. Easy, isn't it?

→ **PUBLISHER:** KEYSTONE LEARNING **CONTACT:** WWW.KEYSTONELEARNING.COM
SUPPORT: WWW.KEYSTONELEARNING.COM/FAQ.ASP **SYSTEM REQUIREMENTS:** WINDOWS 98/ME/2000/XP AND WINDOWS MEDIA PLAYER **LIMITATIONS:** NONE

KeyStone Learning

Get to grips with the basics of Windows XP Home Edition with the help of this instructional video

Anyone who's just bought a new computer, or is thinking about upgrading to Windows XP from an older version of the Operating System, may well be worried about learning the new features of XP. KeyStone Learning has earned itself a respected name when it comes to producing video tutorials. On this month's cover disc you'll find one such video entitled Windows XP Home Edition Level 1.

Provided in WMV format, the video plays in *Windows Media Player* and enables you to learn about the new features of Microsoft's latest Operating System at your own pace. All of the information is presented in a highly accessible fashion, making it an ideal starting point for beginners, as it provides you with everything you need to know to start off with.

Let us introduce you...

The video begins with a basic introduction to the Operating System, as well as an explanation of some of the new features and what they mean for the average user. After explaining Windows XP's hardware requirements, the video goes on to demonstrate Windows in action, so you can experience the Operating System before you've even installed it.

Starting with the very basics, such as introducing the desktop and Start menu, the video provides an excellent intro to Windows, even for those who've never used a computer before.



The video is narrated in a very friendly fashion and everything is explained clearly

→ UPGRADE

There are a huge number of instructional videos available from KeyStone Learning, covering everything from Windows XP to *Microsoft Office*. You can find out more details about the range of titles and their prices by paying a visit to www.keystonelearning.com. The video on this disc is the first in a series introducing Windows XP.



The introductory video also includes helpful demonstrations that make clear what's being talked about.

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